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TELEGRAPHIC ADDRESS—LANCET, WESTRAND LONDON TELEPHONE NUMBER—GERRARD 5356

No. XII. of Vol. I., 1920.
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ON

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Delivered before the Hunterian Society on Feb. 25th, 1920,

BY W. LANGDON BROWN, M.A., M.D. CANTAB., F.R.C.P. LOND.,

GENTLEMEN,—In his fascinating and inspiring centenary address Professor Arthur Keith laid stress on three salient features of Hunter's researches. Their importance was not fully recognised by those who came immediately after him: he was not concerned in the practical bearing of the investigations he undertook, and they ranged over the whole of the biological sciences, because each discovery in its turn raised so many new questions.

In the discussion that followed we agreed that all these characteristics were exemplified in Gaskell as in Hunter. Gaskell was one of the greatest minds of the nineteenth century, as Hunter was one of the greatest in the eighteenth. Yet, although he has been dead but a few years, I note a tendency in certain quarters to belittle the value of Gaskell's contributions to science. The reaction will come, as it came in Hunter's case, and justice will be done some day. Again, Gaskell was not in the least concerned with the practical bearing of his researches, but he was indefatigable in the search for truth, and as Starling says:—

> "In physiology, as in all other sciences, no discovery is useless, no curiosity misplaced or too ambitious, and we may be sure that every advance in the quest of pure knowledge will sooner or later play its part in the service of man."

This is abundantly true of Gaskell's work. Thus, in regard to his investigations on the heart, Sir James Mackenzie once said to me: "The further I go the more clearly I realise that Gaskell was the man." The clinical importance of his work on the sympathetic nervous system was, perhaps, appreciated in America sooner than in this country, but practical problems arising from the war have now forced them upon our notice. The ever-widening circles of interest which arise from investigation of a single problem is also clearly seen in Gaskell's work. He started by researching on the variation of blood-flow through a limb produced by muscular action. This led him to study the innervation of the blood-vessels and the nature of cardiac rhythm. This, in its turn, led him to investigate the plan of the sympathetic nervous system, which, he found, formed part of a larger system of involuntary nerves with visceral functions. Thereby he was able to determine a segmental arrangement of the whole vertebrate nervous system, which led him on to the morphological problem of the origin of the vertebrates. Many have regretted that he spent so much time and ability on a question which they regard as insoluble; yet it may be claimed, at any rate, that if he did not solve the problem he elicited a whole series of facts of great interest, and has compelled us to look at the evolution of the vertebrates from a new standpoint.

THE EVOLUTION OF THE VERTEBRATE NERVOUS SYSTEM.

I may summarise Gaskell's view of the evolution of the vertebrates in the briefest possible manner, thus:—

In cœlenterates the central nervous system formed a ring surrounding the mouth. When symmetry became bilateral instead of radial and the animal became elongated and segmented, the œsophagus was still surrounded by a ring of nervous tissue. But this proved to have a serious drawback. The law of progress is this—The race is not to the swift, nor to the strong, but to the wise. Increased development of the central nervous system is the essential requisite to this progress; in the great reptilian age the denizens of the earth had far inferior brains to the lords of creation in later times. This is true also of the invertebrates. As we pass from the sponges to the arthropods progress is manifested, first by the concentration of nervous material to form a central nervous system, and then by the increasing bulk and complexity of that nervous system until its culmination is reached in scorpions and spiders. No upward development is possible with degeneration of the central nervous system, and in all those cases where a group owes its survival to degeneration the central nervous system shares in the degeneration. On the other hand, if an animal spends part of its life in a larval condition, and then is transformed into a higher adult form, as, for instance, when a caterpillar turns into a butterfly, or a tadpole into a frog, although there is an extensive destruction of the larval tissues, the central nervous system never shares in this; amidst the ruins of the larva it remains, leading and directing the process of reformation. In the arthropods the larval alimentary canal may be entirely destroyed and eaten up by phagocytes, while the central nervous system not only remains intact, but increases in size.

There is, therefore, ground for postulating the formation of a new alimentary tract, but none for the formation of a new central nervous system. Comparatively early in evolution a conflict is seen between the development of the central nervous system and of the alimentary tract. The highest arthropods developed the central nervous system until it gripped the œsophagus so tightly that they could only continue to exist as blood-sucking animals, such as spiders and scorpions. Thus when vertebrates first appeared the progress of the arthropods was leading to a terrible dilemma—either the capacity for taking in food without sufficient intelligence to capture it, or intelligence sufficient to capture food and no power to consume it. This mistake was rectified and further evolution secured in the vertebrate type by the formation of a new food channel, in consequence of which the brain was free to develop to its fullest extent, growing around the old alimentary canal, which became the central canal of the central nervous system. The infundibular tube represents the old arthropod œsophagus which leads into a large stomach situated in the head, represented in the vertebrate by the ventricles of the brain. The arthropod stomach leads into the straight narrow intestine, just as in the vertebrate the fourth ventricle leads into the straight narrow canal of the spinal cord. In the vertebrate embryo the canal of the spinal cord is joined to the anus by the neurenteric canal, which represents the terminal part of the arthropod intestine.

And here may I interpolate that if the central canal of the nervous system is thus a vestigial structure it might be expected to show, like other vestigial structures, a liability to disease. I would suggest that this might help to throw light on the obscure pathology of three diseases connected with the epithelium of the central canal—Friedreich's ataxia, disseminate sclerosis, and syringomyelia. I was therefore interested to read the report of a case[1] in which disseminate sclerosis and syringomyelia co-existed, again pointing to a common origin.

[1] M. Robertson: Review of Neurology and Psychiatry, vol. x., No. 10.

Geological Evidence.

Gaskell also adduced geological evidence in support of his theory.

Each successive advance in the vertebrates started from the dominant type then existing—mammals from reptiles, reptiles from amphibia, amphibia from fishes. We might, therefore, expect that fishes arose in their turn from the race which was dominant when they first appeared. This was in the Silurian age, when sea-scorpions, king-crabs, and trilobites constituted the dominant race of Palæostraca. And the first fishes resembled Palæostraca so closely that it is often difficult to tell whether an individual fossil is an arthropod or a fish. It is very suggestive that the lowest non-degenerate vertebrate, the lamprey, resembles the king-crab in its larval stage, shedding its arthropod features when it is transformed to an adult.

In the evolution of the nervous system there is a parallel development of structure and function; reflex movements came first, and were possible with a simple form of nervous system such as is presented by the parts concerned in a spinal reflex; then as the supra-œsophageal ganglion became larger and more differentiated, more complex and automatic acts become possible. There is a general agreement among comparative anatomists, I believe, that the supra-œsophageal ganglion of the invertebrate is homologous with the corpus striatum of the vertebrates. The globus pallidus of the corpus striatum represents practically the whole forebrain in the fishes. This centre for automatic action enables the fish to keep up those coördinated rhythmical movements which are necessary to maintain its equilibrium in a fluid medium. With the assumption of terrestrial habits these constant movements would be a hindrance rather than a help. Hence the development of the brain cortex with its inhibitory mechanisms. This is one reason why the newer cortical system so constantly represses the activity of lower centres; it was originally evolved for that purpose. Hence its damage in early life results in a return of rhythmical movements in the form of athetosis. But it did not stop there; for while automatic movements are retained for primitive purposes the cortex not only keeps them in check, but moulds them into those higher forms of movement which we call voluntary. And as the pre-frontal region develops, it in its turn exercises control over both voluntary and automatic movements, restraining emotional expression but increasing skill through increased intelligence.

RECENT VIEWS ON THE EVOLUTION OF MAN.

In this connexion Elliott Smith's recent views on the evolution of man are of interest.

He regards the Tarsius rather than the Lemur as nearest the direct line of human ancestry. Below the mammals the dominant sense is that of smell, but the Tarsius by shortening its nose was able to bring its eyes forward and achieved stereoscopic vision. The increased information thus afforded as to the shape of things developed skilled movements of the hands and a finer sense of touch, with a corresponding cortical area to correlate touch with vision. Man, he says, represents the straight line of development. It is the animals which have departed from this straight line and for self-preservation have developed specialised characters (e.g., the great strength of the gorilla), which have failed in the race for supremacy. Man has developed and become the greatest of the primates because of his faithful dependence upon development of the brain. The key to evolution lies in the continuous development of the nervous system.

Here, as elsewhere, the individual repeats the history of the race. Fœtal movements begin when the tracts connected with the corpus striatum acquire their medulla—i.e., when the fœtus is a fish swimming in amniotic fluid—while the pyramidal tract from the cortex does not become myelinated until the infant begins to walk. And the pyramidal tract announces itself as a new arrival in the spinal system by being the most variable in its position in different species; the last to appear has to accommodate itself to the space left for it by the others.[2] This difference in the history of these structures is correlated with a difference in the symptoms they present when diseased. Thus, while lesions of the basal ganglia, as in progressive lenticular degeneration and Parkinson's disease, cause tremor, rigidity, and weakness, defects in the pyramidal tracts lead to an extensor response, spasticity, and paralysis of voluntary movement. As on the motor, so on the sensory side. The optic thalamus represents an older receptive structure than the sensory cortex. Head and Gordon Holmes have shown that while the stimuli which appeal to the thalamus have to encounter a higher threshold before they can enter consciousness, they tend when effective to produce too marked and too prolonged a change. This the cortical mechanism has to control. The sensory cortex, on the other hand, has a quick reaction-time and a low threshold. It enables attention to be concentrated on any part of the body that is stimulated, and the sensations to be brought into relation with other sensory processes, past and present. It contributes, therefore, towards that control of feeling and instinct which is necessary to evolutionary progress. Or to take another example, man, having laboriously acquired the power of speech, has to learn the still more subtle art of silence.

THE INFLUENCE OF THE GREGARIOUS HABIT.

Just as the evolution of the individual is marked by greater powers of reaction and yet by a more controlled display of that power, so this process widens from the individual to the community of which he forms part. Self-control has to be learned, not only to divert energy into higher channels, but for the sake of others. Twice a "fault" in evolution has occurred: once when the dilemma between nutrition and intelligence was allowed to arise among the invertebrates, and again in the development of the huge mesozoic reptiles. The complete disappearance of these enormous animals recalls how frequently the worship of the ideal of the colossal, or shall I say "Kolossal," has heralded a downfall. It may be claimed that these gigantic reptiles were adapted to existing conditions, and vanished when those conditions changed. And yet there is something about them that inevitably suggests the 'prentice hand; just as there is about the first railway engine, the first motor-car, or the first "tank." Anyhow, mere bigness was then exploited to the full and found wanting. Now, it is important to note that on both these occasions a way of escape was found in gregariousness—the substitution of coördination between smaller individuals: firstly, for increased complexity of brain; and secondly, for mere increased size of body.

The enlargement of the unit exposed to natural selection by the development of a coördinated herd, in which each individual is absorbed into the

[2] Tilney: Journal of Mental and Nervous Diseases, vol. xlvi., p. 81.

community and is helpless apart from it, marks as distinct an advance in evolution as that from unicellular to multicellular organisms, and is fraught with even greater possibilities. For bees and ants this development was comparatively easy. A swarm of bees, says Trotter,[3] produces the illusion of a single animal, differing from the other metazoa, which it has outdistanced in the race of evolution, not merely in its immense power, energy, and flexibility, but also in the almost startling fact that it has recovered the gift of immortality which seemed to have been lost with its protozoal ancestors. Now it is to the very smallness of the brain of the individual bee, and the limited number of reactions of which it is capable, that the early attainment of complete success in the organisation of the hive is due. But, as he points out, for the mammals, with their greater powers of varied reaction, the path to the consummation of the possibilities offered by gregariousness must of necessity be longer, more painful, and more dangerous, and this applies in an altogether special degree to man. According to H. G. Wells, the change from the Palæolithic huntsman to the agricultural Neolithic man marks the stage at which self-suppression had to begin. "Man then entered upon the long, tortuous, and difficult path for the common good, with all its sacrifice of personal impulse, which he is still treading to-day." But I doubt if even Palæolithic man escaped from the control of the herd.

The first law of the herd is, "Thou shalt not." Just as the development of the higher nerve centres leads to inhibition of instinctive activities, so the development of communal life must restrict the freedom of the individual. To take one instance —the history of mankind has been the story of a struggle for exogamy and monogamy in the interests of the race—and the very difference of our attitude towards a breach of these two laws is an indication of the length of the evolutionary phases which stretch out between them. It is curious that while the evolution of man's body from lower animals meets with general acceptance among educated people, the idea of a similar evolution of his mind is often found repellent. Yet it is clear that the individual recapitulates the history of the race mentally as he does physically, and with similar modifications. Just as the fœtus is a swimming fish profoundly modified by the protection derived by intra-uterine life, so the infant is a primæval savage, profoundly modified by helplessness and immaturity. Samuel Butler, who was too far ahead of his time for many of his evolutionary ideas to gain acceptance, expressed the same idea somewhat as follows:—

> Man begins as the primordial cell, splitting himself up, always doing as he did before but always with the additional experience gained by having done it once more. He will do his fish trick, so to speak, on his head, from long practice, and then the tadpole trick by rote. Then he grows arms and legs, all unconsciously, from the inveteracy of habit, but he has not learnt the lesson of human construction so thoroughly. Some parts of it, such as breathing, he is well up in, inasmuch as it forms part of previous rôles—but the teeth and hair, the upright position, the power of speech, though all tolerably familiar, give him trouble. Then comes his newer and more complex environment, and this puzzles him.

THE UNCONSCIOUS MIND.

Freud has done good service in emphasising the essential resemblance between the working of the childish and primitive minds. The myths of the ancients are repeated to-day in children's imaginations. It is not a mere accident that in fairy-tales it is the youngest son who slays the dragon and marries the princess, for just as fairy-tales express the attempts of the primitive mind to escape from the pressure of reality, so the child escapes from the feeling of inferiority in day-dreams. And elder children usually see to it that this feeling of inferiority shall be most experienced by the younger. When Dr. Montessori unreservedly condemns fairy-tales for children she forgets how natural, nay, how imperative, it is for the individual to repeat the history of the species mentally as he does physically.

And a reversion to this childish and primitive attitude of mind is seen in many forms of insanity. On the mental side, like Peter Pan, a psychoneurotic never grows up. As Hughlings Jackson said, there is a positive and a negative element in every case of insanity. In modern parlance the reality principle is in defect, the pleasure-pain principle is in excess.

But to a varying extent we are all still "puzzled by our environment." Man is possessed of powerful instincts, boundless desires, and a varying degree of reason. He has a considerable capacity for pleasure, and a much greater capacity for pain—his instincts drive him to seek the former and avoid the latter—his reason seeks after reality. Or if his reason does not seek it his environment forces it on his notice; most people tire of knocking their heads against stone walls, or of kicking against the pricks. As development proceeds the earlier mental phases tend to sink into the unconscious. Yet, as Bergson says:—

> "The past follows us at every instant, all that we have felt, thought or willed from our earliest infancy, is there, leaning over the present which is about to join it, pressing against the portals of consciousness that would fain leave it outside. The cerebral mechanism is arranged just so as to drive back into the unconscious almost the whole of this past, and to admit only that which can cast light on the present situation, or further the action now being prepared—in short only that which can give useful work. At the most only a few superfluous recollections may succeed in struggling through the half-open door. These memories, messengers from the unconscious, remind us of what we are dragging behind us unawares."

If I may change the metaphor, the surface current of the stream gives little idea of its force and depth; on which, however, its momentum depends. Samuel Butler[4] carried this idea still further back, expressing it beautifully in yet another metaphor.

> "His past selves are living in him at this moment with the accumulated life of centuries. 'Do this, this, this, which we too have done and found profit in it' cry the souls of his forefathers within him. Faint are the far ones, coming and going as the sound of bells wafted to a high mountain, loud and clear are the near ones, urgent as an alarm of fire."

And yet as we develop we remain more responsive to the far-off sounds than to the near ones. Indeed, as Otto Rank says,—

> "The detachment of the growing individual from the parental authority is one of the most necessary, but also one of the most painful, achievements of evolution."

To learn to see things as they are is the task of growing up. The unconscious mind employs only the pleasure-pain principle, which takes no account of time, as is well illustrated in dreams. The

[3] Trotter: Instincts of the Herd in Peace and War.

[4] Samuel Butler: Life and Habit, p. 52.

reality principle, recognising the element of time, does not demand immediate satisfaction, but can devote itself to the ultimate achievement of its aims. But since the pleasure-pain principle cannot be altogether abandoned it must be adapted and adjusted.[5] And out of defective adjustments psychic conflicts arise. I am as convinced that Freud is right in his general conception of the unconscious mind as I am that he is wrong in his limited view of the way in which it works. Its action is based on all the instincts, not merely on one. And we may adopt Dupré's epigrammatic classification of them—the instinct of self-preservation, relating to the life of the individual, the instinct of reproduction relating to the life of the species, the instinct of association relating to the life of society. In general the emotional conflicts which arise occur between the last and either of the other two.

All who have studied the psychoneuroses of war are agreed as to the predominating influence of the instincts of the herd and of self-preservation. Or as Rivers[6] puts it:—

"They depend upon a conflict between the instincts of self-preservation and certain social standards of thought and conduct, according to which fear and its expression are regarded as reprehensible."

And he points out in an interesting way the influence that the different training and responsibility of officers and men has in determining the type of neuroses they each develop. I have elsewhere compared some of these neuroses to the protective mimicry of insects, not a voluntary but an instinctive act. Rivers says:—

"On the whole the officer is more widely educated than the private soldier; his mental life is more complex and varied, and he is, therefore, less likely to be content with the crude solution of the conflict between instinct and duty which is provided by such disabilities as dumbness or the helplessness of a limb. The histories of officers suffering from an anxiety neurosis often show the existence of temporary mutism, paralysis, or other functional disability in the early stages of their illness; but these solutions of their conflict do not satisfy them, and their disabilities speedily disappear to be replaced, sooner or later, by symptoms directly dependent on anxiety."

THE CONFLICT OF THE INDIVIDUAL WITH THE HERD INSTINCT.

A man may resolve his conflict with the herd instinct in one of four ways, according to Stoddart[7]:—

(1) "The herd instinct is voluntarily ignored, the delinquent avowing to himself that he has a perfect right to do as he likes." But few are prepared to become Ishmaels.

(2) "The conflict is condoned by 'rationalisation.'" This amounts to conscious or unconscious hypocrisy.

(3) "The emotional tone may gradually pass off as years roll by, and he becomes more occupied with other matters." Or, one might add, the emotion becomes sublimated into higher or more social activities—the best way of escape.

(4) "The memory is banished from consciousness, but not from the mind; an attempt is made to repress it so that it does not re-enter into consciousness. But repression may subsequently fail." Then it will prove the basis for neuroses.

PSYCHO-ANALYSIS *versus* SUGGESTION.

Now it is only the last solution which comes under our treatment. And it might be urged that, if psycho-analysis is right, suggestion is wrong as a therapeutic measure. Suggestion treats the symptoms by telling the sufferer there is no cause for their existence. Psycho-analysis professes to open the festering abscess, to drag the skeleton from the cupboard into the light of day. The bogey, stripped of its sheet and candle, becomes a turnip on a stick. And yet both have a common aim—to bring the sufferer into harmony with the herd. We are suggestible just because we are gregarious, but we are only susceptible to suggestions emanating from the herd. Psycho-therapy attempts to produce a more stable individual, adapted to his environment, but, as Trotter shows, not necessarily, and indeed not probably, a more adaptable being. It is not to the stable, adapted man that we look for progress. "A man is a fool or a physician at 40," runs the old adage. Perhaps both, you may say. Yet its meaning is clear. After 40 the normal man becomes less sensitive to his existing environment because he has fitted himself into it more or less, and philosophically recognises his limitations; but by that very fact he can the less adapt himself to a different one. Genius is permanently out of harmony with its environment, just as is insanity. Yet one could hardly regard with satisfaction the prospect of a world without the unstable elements that make for originality and brilliance. How much pleasure in life you and I would have missed had R. L. Stevenson been a healthy, normal individual. Have you ever read Leonard Guthrie's[8] history of the unemotional person? I quote only the latter part:—

"He is a type of what is called a manly boy, without any nonsense about him; good-tempered, honourable, easy-going, not highly intellectual, but with a fair amount of common sense of a rather narrow order. He can obtain a pass degree at almost any university without much trouble. He makes an excellent clergyman of the muscular type, though perhaps a little intolerant of conscientious doubters of creeds which he never dreamed of questioning. In the army he is the idol of his men, who readily follow his leadership of a forlorn hope without blaming him for having made it so. In commerce he conducts a safe and never risky business, and, with capital and competent managers to guide him, will be prosperous. If wealthy he may develop a taste for art, and become renowned as possessing the finest collection in the country of pictures of the early Victorian British or 'Baby's birthday' school. In politics or religion he will stick to his party. Throughout his life he has no strong passions to battle with, care sits lightly upon him, and his ambitions are never thwarted, for he is perfectly satisfied with the state into which it has pleased God to call him."

In other words, he is admirably adapted to the herd, but he does not make for progress.

For the pressure of the herd, while developing altruism and perhaps raising the average level, tends on the other hand to discourage brilliant departures from that average. And it seems to me inevitable that the natural trend of evolution must be in the future, as in the past, in the direction of developing gregariousness, and that we must adapt ourselves to it or suffer for our departure from it. Therefore, I do not regard the curtailment of our personal liberty necessitated by the war as a temporary measure, but as a permanent change in the direction I have indicated. And we are beginning to realise from the misfortunes by which civilisation has been reduced to its present plight that the next step in gregariousness must be another enlargement of the unit, extending beyond the limits of any single race or nation.

[5] See Federn: Psychoanalytic Review, vol. ii., p. 1.
[6] Rivers: War Neurosis and Military Training, Mental Hygiene, vol. ii., p. 513.
[7] Stoddart: Review of Neurology and Psychiatry, vol. xiii.
[8] Leonard Guthrie: Functional Nervous Disorders in Childhood, p. 11

It is not likely, however, that the process which started at least as far back as neolithic times will be completed in the life-time of anyone here present. But such speculations lie outside my practical purpose, which is to call to your notice the part played by the sympathetic nervous system in certain neuroses and its close relationship with the unconscious mind.

THE ORIGIN OF THE SYMPATHETIC NERVOUS SYSTEM.

John Hunter applied the term "consciousness" to purposive though involuntary responses, while expressly stating that he was employing the word in a different sense from its usual one, preferring to do so rather than to coin a new word. To-day we use "consciousness" in a much more restricted sense, and certainly would not apply it to reactions occurring apart from the nervous system at all. Professor Keith said we now speak of such responses as chemiotaxis, and are no wiser. While this is substantially correct, it is an advantage to have a term which reminds us that the most primitive responses of animals are due to chemical stimuli, such as we see when a plasmodium creeps away from boiled water and towards an infusion of dead leaves. The development of a nervous system is a later event; it enables very rapid reactions to occur. Now, for what purpose would a rapid response be most vital? Obviously, for self-preservation.

These considerations explain certain fundamental facts. As differentiation proceeded the chemical stimulants or hormones became concentrated and specialised in certain ductless glands. The continuity of the species no longer depended on simple fission, but on the activity of special germ cells. The close association we note between the reproductive glands and the endocrine glands is thus based deep in evolution. Then, when the more rapidly reacting nervous system developed, while concerned with the functions of organic life, it would be most intensely active when a struggle for existence became necessary. The sympathetic nervous system is a mechanism adapted for rapid and widespread reaction in this struggle. Further, as this more rapid mechanism developed it might be expected to do so in connexion with the older chemical methods. So that as both endocrine glands and the sympathetic nervous system became specialised they remained associated. This association is reciprocal; not only does the sympathetic nervous system stimulate the secretion of certain ductless glands, but the secretion of some of them in turn increases the sympathetic response. Thus the sympathetic nervous system, the endocrine glands, and the gonads form a basic tripod entrusted with the duty both of the preservation of the individual and the continuity of the species. Their relationship is shown in disease as well as in health, and is reflected in many neuroses and psychoses.

Definite evidence in support of this association is provided by the researches of Dr. J. F. Gaskell, who has done so much to confirm his father's views. In the worms there are cells in the central nervous system which are the common ancestors of both the sympathetic ganglion and the adrenalin-secreting cell. Their development is parallel with that of contractile blood-vessels, comparable with vertebrate heart muscle, which are acted upon both chemically and nervously by these ancestral cells. They regulate but do not initiate the contractile rhythm—an interesting support to another Gaskellian theory. In the lowest vertebrate, the lamprey, there is a scarcity of sympathetic cells but a diffuse distribution of this adrenalin-secreting tissue, which controls the blood-vessels. In the course of evolution these cells have gradually given way to an increasing development of the sympathetic system, so that ultimately their only surviving remnant is the medulla of the adrenals. Thus, there is a gradual predominance of the nervous over the chemical element in the partnership as the higher levels of the nervous system are evolved.

ARRANGEMENT OF THE AUTONOMIC NERVOUS SYSTEM.

The starting point of Gaskell's observations on the sympathetic was his recognition of the small calibre of its fibres as they left the spinal cord. Adopting this as a standard, he showed that there were fibres with visceral functions in the cranial and sacral nerves. They may be called the parasympathetic, applying the name "autonomic nervous system" as an inclusive term for all these small fibres which carry out the functions of organic life without the control of the will. They form part of the primitive segmentation of the cord, but are absent from its cervical and lumbar enlargements, which are devoted to the innervation of those later developments, the great limb muscles. He showed that these small fibres represented the connector element of reflex action, and that their method of distribution outside the spinal cord enabled them to produce widespread effects.

Gaskell further showed that when the sympathetic and parasympathetic were distributed to the same structure they were antagonistic. Thus, the sympathetic dilates the pupil while the parasympathetic contracts it—the sympathetic accelerates the heart, the parasympathetic slows it. The sympathetic inhibits or diminishes the movements of the alimentary canal, while the parasympathetic increases them. Thus the reason for double innervation was explained, which Hunter had noted but could not understand. Speaking of the vagus in fishes, Hunter said—

> "Surely it must appear extraordinary that a nerve should arise from the brain to be lost in common parts, while there is a medulla spinalis giving nerves to the same parts. It must still remain one of the inexplicable circumstances of the nervous system."

Yet Hunter had got near to recognising why involuntary muscular actions should require a double nerve-supply without actually grasping it.

The Functions of the Autonomic Nervous System.

The rôles of the sympathetic and parasympathetic may be summarised thus. Sympathetic stimulation serves to activate the body for a struggle, and to increase its powers of defence. The pupil dilates to increase perception of light; the heart beats more quickly and more forcibly to supply the muscles with blood; the blood-vessels in the visceral area constrict, raising the blood pressure, and driving the blood from the digestive area, whose functions are simultaneously inhibited, into the skeletal and cardiac muscles, the lungs, and the brain. The sweat glands are stimulated to cool the body heated by its excessive muscular effort, and the hairs are erected in many animals to render them more alarming. As Crile[9] says:—

> "The mechanisms for self-defence which we now possess were developed in the course of vast periods of

[9] Crile: The Origin and Nature of the Emotions. Philadelphia and London. 1915.

time through innumerable intermediate stages from those possessed by the lowest forms of life. One would suppose, therefore, that we must now be in possession of mechanisms which still discharge energy on adequate stimulation, but which are not suited to our present needs."

The pilo-motor fibres are an example of this, for, however useful the erection of hairs may be to a cat confronted by a dog, the "goose-skin" experienced by man under emotional stress can serve no useful purpose. Some emotional responses, like some of our bodily structures, are vestigial remains.

Gaskell showed that the inhibitory action of the vagus on the heart is anabolic. The display of kinetic energy is replaced by the storage of potential energy. And Cannon[10] has extended this, pointing out that the functions of the cranial visceral fibres may all be regarded as anabolic. He says:—

"A glance at these various functions of the cranial division reveals at once that they serve for bodily conservation: by narrowing the pupil they shield the retina from excessive light, by slowing the heart-rate they give the cardiac muscle longer periods for rest and invigoration, and by providing for the flow of saliva and gastric juice, and by supplying the muscular tone necessary for contraction of the alimentary canal they prove fundamentally essential to the processes of proper digestion and absorption, by which energy-yielding material is taken into the body and stored. To the cranial division of the visceral nerves, therefore, belongs the quiet service of building up reserves and fortifying the body against times of need and stress."

The sacral division of the parasympathetic consists of the pelvic visceral nerve. It may be regarded mainly as a mechanism for emptying.

"Like the cranial division, the sacral is engaged in internal service to the body, in the performance of acts leading immediately to greater comfort." (Cannon.)

In pain, fear, rage, and any intense excitement the sympathetic neurons are brought rapidly into play, and the action of the cranial division of the parasympathetic is inhibited. In other words, the anabolic activities of the body are in abeyance, and the katabolic activities go on unchecked. Potential energy is converted into kinetic and reserves are freely spent. This is comprehensible now that we see these katabolic activities are defensive in origin and aided the primitive animal in its struggle with its antagonist, and that complex organism the State, when at war, like the individuals of which it is composed, inhibits its anabolic activities, spends its reserves, and brings into play every katabolic activity which can aid it in its struggle for victory. But exhaustion may follow.

The Action of Adrenalin.

The way in which adrenalin coöperates in all this has been admirably expressed by Cannon:—

"Adrenalin plays an essential rôle in calling forth stored carbohydrate ..... flooding the blood with sugar; it helps in distributing the blood to the heart, lungs, central nervous system, and limbs, while taking it away from the inhibited organs of the abdomen; it quickly abolishes the effects of muscular fatigue, and it renders the blood more rapidly coagulable. These remarkable facts are, furthermore, associated with some of the most primitive experiences in the life of higher organisms, experiences common to all, both man and beast, the elementary experiences of pain, fear, and rage that come suddenly in critical emergencies. ..... The most significant feature of these bodily reactions ..... is that they are of the nature of reflexes; they are not willed movements; indeed, they are often distressingly beyond the control of will."

[10] Cannon: Bodily Changes in Pain, Hunger, Fear, and Rage. London. 1915.

Now, one of the features of a reflex is its purposive character. If we seek for an explanation of the similarity of the sympathetic response to fear, pain, and rage, and other strong emotions, we may find it in Darwin's "Expression of the Emotions in Man and Animals":—

"Great pain urges all animals, and has urged them during endless generations, to make the most various and diversified efforts to escape from the cause of suffering. ..... Whenever the emotion of fear is strongly felt, though it may not lead to any exertion, the same results tend to reappear, through the force of inheritance and association."

Crile illustrates this by a modern instance and a modern simile:—

"And now, sitting at his desk in command of the complicated machinery of civilisation, when he fears a business catastrophe his fear is manifested in the terms of his ancestral battle in the struggle for existence. ..... Nature has the one means of response to fear, and whatever its cause, the phenomena are always the same, always physical." "Under modern conditions of life neither fight nor flight is de rigueur. The individual under the stimulation of fear may be likened to an automobile with the clutch thrown out, but whose engine is racing at full speed. The petrol is being consumed, the machinery is being worn, but the machine as a whole does not move, though the power of its engine may cause it to tremble."

The influence of this perturbation can be traced in many diseases. But we shall see these in truer perspective if we note the relationship of the autonomic to the rest of the nervous system.

THE INFLUENCE OF PSYCHIC CONFLICTS AT DIFFERENT LEVELS.

One of Hughlings Jackson's most illuminating generalisations was the conception of the evolution of the nervous system in three levels. Jelliffe has modified the original idea in labelling these the vegetative, the sensori-motor, and the psychic levels. However distinct in their evolution, the structures composing these levels have become inextricably intertwined. So that a disturbance originating in a viscus may produce a psychic disturbance, while conversely a psychic conflict may show its effect only at the vegetative level. If it shows its effect at the psychic level it may produce an obsession, if it sinks further into the unconscious it may produce a functional tremor, paralysis, or contracture; or sinking still further away may show its effect in the autonomic nervous system. If this effect tells mainly on the parasympathetic it may declare itself as asthma, arrythmia, slow pulse, hyperchlorhydria due to over-secretion, or enterospasm. If it tells on the sympathetic the results may be even more diverse. "The sympathetic system is at the mercy of the mind" said Leonard Guthrie. But in disease the action of the sympathetic, instead of being general, may become dissociated, throwing the machinery out of balance. Thus, over-stimulation of the sympathetic may mainly affect the vaso-constrictor nerves, producing a rise of tension, which is often seen to follow prolonged worry. Or it may cause atony of the stomach and bowels, with spasm of the associated sphincters, resulting in reflex dyspepsia and intestinal stasis. I need only mention in passing the production of gall-bladder and appendix dyspepsias in this way. Tyrrell Gray has recently emphasised the influence of visceroptosis in producing stasis not so much by leading to mechanical kinking, but by dragging on the sympathetic nerves in the mesentery and thus inhibiting peristalsis. Similarly, stasis may be initiated through the influence of

mental shock, anxiety, or grief on the sympathetic. Thus we can understand why, though visceroptosis has been present since birth, it caused no symptoms until sympathetic inhibition supervened. We can also understand not only why a Curtis support may relieve symptoms of visceroptosis by raising intra-abdominal pressure, even though X rays show that it does not replace the viscera, but also why a happy marriage may be even more effectual. Not all our woes and ills depend on our having the presumption to walk on two legs instead of four.

The influence of the sympathetic on the thyroid gland is profound. Cannon joined the central end of the phrenic nerve to the peripheral of the cervical sympathetic in a cat, so that the gland was stimulated with every breath. This resulted in tachycardia, increased excitability, diarrhœa, exophthalmos on the side of the operation, and a great increase in metabolism. In some cases there was an increase in the size of the adrenals. The whole aspect of the sufferer from Graves's disease resembles that of fear, and is produced through a similar nervous mechanism. Crile says:—

"I have never known a case of Graves' disease to be caused by success or happiness alone, or by hard physical labour unattended by psychic strain, or to be the result of energy voluntarily discharged."

In this connexion note the epidemics of hyperthyroidism which followed the air-raids on London, the Kishineff massacres, and the San Francisco earthquake.

GLYCOSURIA.

Take, again, the case of glycosuria. When stocks go down in New York, says Crile, diabetes goes up. Temporary glycosuria occurred in a number of men who merely watched a football cup-tie without participating in it. I have been struck with the number of cases I have seen in young naval officers. I am inclined to refer its higher incidence in the senior service to the much greater responsibility which falls to the lot of junior officers. Diabetes is characterised, like sympathetic stimulation, by an exaggerated metabolism. This first shows its effect on the most abundant and most easily metabolised of the foodstuffs, the carbohydrates, which are also essential for muscular action, to which sympathetic stimulation should normally be a preliminary. It is noteworthy that the glands which increase katabolism and lower cabohydrate tolerance, the pituitary, thyroid, and adrenals, are all stimulated by the sympathetic. On the other hand, the pancreas, which is anabolic and increases carbohydrate tolerance, is probably inhibited by the sympathetic. Thus, we can understand why sympathetic stimulation through various disagreeable emotions should increase metabolism generally, and specially lower carbohydrate tolerance. And alimentary rest would diminish glycosuria by enforcing a more economical method of metabolism. Allen, who is one of the most convinced adherents of the pancreatic origin of diabetes, admits that a man may actually die of diabetes and yet have as good a pancreas as normal—so that a functional incapacity of the pancreatic cell-islets, due to some nervous influence, may be responsible. In his latest writings he lays considerable stress on the hydropic degeneration of these islets, while acknowledging this to be a result, and not a cause, of the disease. Even he admits, therefore, that ordinary diabetes shows itself through the pancreas rather than merely as a symptom of pancreatic disease. And I think I have shown that the views of Allen on the one hand and those of Eppinger, Falta, and Rudinger on the other concerning a loss of endocrine balance as the cause of diabetes find their reconciliation in its production through the sympathetic nervous system.

In this connexion I may quote two interesting cases recorded by Singer and Clark,[11] in which there was a definite alternation between the exhibition of mental symptoms and the presence of glycosuria, just as in catatonia the somatic disorders clear up during the mental disturbance, reappearing as the mental condition becomes clearer. It would appear as if the emotional discharge asserted itself either at the metabolic or the psychic level in such conditions and not at both.

I do not mean to imply that all cases of diabetes are necessarily dependent on a functional disturbance of the sympathetic nervous system. We are too ignorant of the morbid anatomy of the sympathetic to say this. In some diseases of the sympathetic, such as pellagra, definite structural alterations have been found, and there is a crying need for its systematic microscopical examination in diabetes. All I do claim is that diabetes can be most easily explained by a disturbance of the sympathetic nervous system, and that this disturbance can be produced by emotional stresses and strains. The frequency with which it occurs in that most emotional race, the Jews, and its association with families of a neuropathic tendency point in the same direction.

The fact that the cause of a vegetative neurosis is not always remembered is beside the mark. The patient would naturally tend to push it "out of his mind," which only means pushing it into that deeper level of the stream where, nevertheless, it is borne along. Nerve impulses tend to run along accustomed channels, whether those channels are conscious or unconscious. Indeed, the longer they are in use the more unconscious they become—a fact that is well illustrated in acts which primarily affect consciousness acutely, such as playing the piano or riding a bicycle.

THE DYNAMIC CONCEPTION OF DISEASE.

Disease means an attempt by the body to establish a new position of equilibrium, whether it is invaded from without or faced by a difficult environment. In this reaction every tissue and organ plays its part, but especially that master tissue the nervous system, through which our predominant position in evolution has been achieved. The dilated pupils, the sweating, the tachycardia and increased katabolism, together with the ultimate adrenal exhaustion produced by many infective fevers shows the similarity of its response to the seen and the unseen foe. In the view here presented there is no break between the chemical reactions carried out by the endocrine glands and the highest reactions of the most recently evolved nervous structures. Endocrinology and psychotherapy are not opposed but complementary measures, applicable to different ends of one system, and both ends may be involved in the same process. The difficulty in harmonising oneself with the environment may be due, in part, to failure in the chemical mechanisms. Psychotherapists are too apt to forget this, and may even suggest to an eminently suggestible subject an explanation of his complexes which springs from

[11] Singer and Clark: Journal of Mental and Nervous Diseases vol. xlvi., p. 421.

their own obsessions. I say this with fear and trembling, expecting the retort that such a remark is merely an interesting demonstration of my own complexes or resistances. But not even the youngest of our therapeutic or diagnostic measures is infallible. Yet it is just as erroneous merely to treat the patient as a test-tube in which certain drug reactions can be made to occur, and the man who does so not only fails to realise his responsibility but misses a most interesting part of his work. The old injunction to examine the whole of a patient must be interpreted to include the consideration of his environment in its widest sense. With this widened conception opening out before us, the practice of medicine becomes an occupation of even more absorbing interest, to which we can devote our lives with pleasure and enthusiasm.

HEAT HYPERPYREXIA.[1]

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DURING the summers of 1916, 1917, and 1918 a large number of cases of illness due to exposure to high atmospheric temperature occurred amongst the troops in Mesopotamia, and it is upon a careful study of these cases that this paper is based.

Ætiological Factors.

First among these is *climate*. High temperature, coupled with the flatness of the country and absence of shade and the great humidity in certain parts owing to floods and swamps, make Mesopotamia one of the most dangerous countries in the world as regards risk of heat hyperpyrexia.

A maximum shade *temperature* of 110° F. appears to be the dangerous limit. When this is reached some cases of "effects of heat" are sure to occur, and each degree of rise above this limit is attended by an increasingly larger number of cases. Temperatures of 120° or over are exceedingly dangerous, and on these days, in spite of all precautions, large numbers of heat-stroke cases occur. A comparison of the temperature records of 1917 and 1918 for Baghdad shows the reason of the far greater number of cases of heat-stroke in the former year. Thus, in 1917, on six days in July the shade temperature was 120° and upwards, and on 15 days it was 115° and over. In 1918 the temperature did not reach 118°, and on only two occasions was it 115° or over.

The effect of heat is undoubtedly *cumulative* in action, one or two very hot days not necessarily being followed by a large number of cases of heat-stroke; it is the succession of several hot days which is dangerous. The case incidence curve follows the temperature curve with a delay of a few days in the rise of the former. The cumulative effect of heat is shown on the individual; thus a man may be exposed to heat for one or more days and then develop an attack of heat hyperpyrexia in the night or early morning after the atmospheric temperature has fallen considerably.

As showing the effect of *stagnation of air*, free currents of air have great protective value by promoting evaporation from the skin and loss of heat. Electric fans and punkahs were largely used in Mesopotamia in hospitals and dwellings occupied by troops from 1916 onwards. They were of vital necessity to the British troops during the hot months. When the temperature is very high the air from a fan is like a hot blast, and unless the body be covered with a moist sheet, or a moist screen intervenes, the fan is of little value as a cooling agency, and, indeed, may do more harm than good.

The risk of heat hyperpyrexia depends largely on personal protection, and if care be not taken any *age* is subject to it. The case-mortality is undoubtedly greater in men over 40.

The influence of *race* is very important. Heat hyperpyrexia, due to heat alone and not to the complication of other diseases, is very uncommon amongst Arabs and Indians; indeed, when it occurred in them some complicating disease, such as malaria, was almost always found as the cause. White races are much more susceptible to the effects of heat, and in British troops a large percentage of the cases was due to heat per se.

Exertion taken during the heat of the day is a great predisposing cause, especially if heavy kit is carried.

In regard to *predisposing diseases*, any disease causing pyrexia predisposes to heat-stroke in the hot weather. Malaria is one of the commonest of these, and in Indians was almost always the cause of heat hyperpyrexia. During an attack of sand-fly fever in the hot months hyperpyrexia occasionally occurred. Captain H. C. Sinderson has suggested[2] that sand-fly fever is a common cause of heat hyperpyrexia. I cannot agree with this, because in the great majority of cases of heat-stroke there is no evidence whatever of sand-fly fever, and during the great incidence in July and August, 1917, sand-fly fever was entirely absent. Enteric group disease, if occurring in the hot weather, is sometimes complicated by heat hyperpyrexia, as also is typhus fever both in the acute stage and apyrexial period. I have seen heat-stroke occur during the early stages of small-pox before the appearance of the rash.

Pathology and Morbid Anatomy.

I have no doubt that heat hyperpyrexia is a clinical entity and that it occurs apart from intercurrent diseases. The clinical history of cases of pure heat hyperpyrexia and the course of the symptoms after the acute stage, which often exhibit a prolonged pyrexia and profound toxæmia with the absence of any bacteriological infection, strongly indicate that the cause is an auto-intoxication as the result of the effect of heat on the body tissues. My experience leads me to believe that this is the cause of heat hyperpyrexia. The auto-intoxication occurring in heat-stroke cases was found to be associated with the presence of acetone and diacetic acid in the urine in only a small proportion of cases (about 12 per cent.), and in these the reaction was of only moderate intensity. It thus appears that heat hyperpyrexia is not due to an acid intoxication. The presence of indican in excess in the urine in acute cases is of importance and is an evidence of the auto-intoxication present.

Suppression of sweating did not, in my experience, always precede heat hyperpyrexia, and though it is undoubtedly an important predisposing cause it cannot be regarded as the primary one. Thus some cases of heat hyperpyrexia occurred suddenly in exposed men who were in good health without

[1] Abstract of paper read before the Medical Society of London on March 8th, 1920.

[2] Brit. Med. Jour., July 19th, 1919.

any previous evidence of lack of skin action, and in cases of the gastric type of heat hyperpyrexia no previous suppression of sweating was observed, though they had been under observation in hospital for several days.

Clinical Types of Illness Caused by Exposure to Heat.

(1) Heat exhaustion (mild type); (2) gastric type; (3) choleraic or gastro-intestinal type; (4) heat hyperpyrexia (sunstroke). In types 1, 2, and 3 heat hyperpyrexia may suddenly develop unless great care be taken in the removal of patients from a hot atmosphere. Types 2, 3, and 4 are all dangerous, and in them the prognosis is grave. Of 80 severe cases of effects of heat, of which I made careful notes, 13 (16·2 per cent.) were of the gastric type, 9 (11·2 per cent.) of the choleraic, and 58 (72·5 per cent.) were hyperpyrexial.

Gastric type.—This is one of the most interesting and treacherous forms. The patient may have a flushed face, and be restless and irritable with marked nausea and occasional vomiting, the mouth temperature and pulse normal for several days, but the rectal temperature often rising about 2°. The liver usually shows a fatty enlargement. The knee-jerks were lost in all of nine cases on which it was specially tested. This is a valuable diagnostic sign. The knee-jerk reappears when convalescence is established, the time varying with the severity of the case. Many of these cases, after four to ten days of premonitory symptoms suddenly developed a fatal heat hyperpyrexia.

Gastro-intestinal type.—In this type the onset is sudden, marked collapse occurring. The patient usually has a temperature of 101° to 103° F. Vomiting is marked and diarrhœa occurs. There were cramps in the abdomen and legs in some of my cases. The face is pale, the eyes sunken, and the skin pale and clammy. The knee-jerks are generally lost; in 4 cases specially examined they were absent in 3 and diminished in 1. The general appearance of the patient is similar to that of cholera. This type was of uncommon occurrence, but the mortality was high, death often supervening within three or four days.

Heat hyperpyrexia.—The onset is often quite sudden, the patient being taken ill when on duty with a sudden high rise of temperature and loss of consciousness. In some cases the patient, when off duty, may be found by his comrades unconscious and dying. Heat hyperpyrexia frequently occurred in the very hot weather in hospital patients suffering from another disease. In them the temperature would often suddenly rise to 110°, coma and convulsions supervening.

In many cases, however, the onset is more gradual, malaise, headache, and restlessness occurring and sometimes nausea and vomiting. Frequency of micturition is a characteristic early symptom, and is sometimes associated with urethral pain. The temperature is somewhat raised, 100° to 102° or so, and the skin is hot and dry. These preliminary symptoms usually last for a few hours, sometimes as long as 48, after which mental excitement and delirium supervene and the temperature rapidly rises to about 110°. With the hyperpyrexia coma and stertorous breathing occur, the face is flushed and cyanosed, and the conjunctivæ congested. The pupils are often dilated in the early stage and contracted in the comatose condition. Fibrillary twitchings of muscles and convulsions are very common, and the breathing may be Cheyne-Stokes in character. Incontinence of urine and fæces accompanies the coma. Unless the temperature is reduced by treatment death rapidly occurs from hyperpyrexia, the mode of death usually being asphyxial in type.

Marked cardiac dilatation, often associated with a systolic murmur, occurs in the severe cases. This may remain for a few weeks after the attack and needs special care. In some cases bronchitis and congestion of the bases of the lungs occur. In one case definite air-hunger was observed, and in another a spasmodic type of breathing like that of uræmic asthma. Pulmonary œdema was a terminal event in the fatal cases.

On examining the urine, indican was found present in excess in all of 6 acute cases in which a special examination was made. Acetone and diacetic acid were found present in small amount in 1 out of 8 acute cases specially tested. Albumin was detected in small amount in 3 out of 8 acute cases. No casts were seen.

Of nervous symptoms, restlessness and delirium occur with the onset of hyperpyrexia, and are quickly followed by stupor and coma, with incontinence of urine and fæces. Muscular twitching and convulsions are very common with the high temperature. The knee-jerk is almost always absent in the pure heat-stroke cases during the acute stage. Out of 32 cases specially tested the knee-jerk was absent in 27, diminished in 2, and normal in 3; in these latter cases the hyperpyrexia was probably malarial in nature. In severe cases the knee-jerk does not return for three or four weeks, in milder cases it returns earlier. The presence of knee-jerks is a valuable prognostic sign, for when they have returned there appears to be much less risk of a relapse, and the patient may then be evacuated with safety. This sign was of great practical help in deciding on the disposal of heat-stroke patients. After the acute stage in the severe cases marked mental symptoms often remain for some weeks or longer; irritability, mental confusion, and delusions are not uncommon. Usually, but not always, these symptoms clear up. Defective articulation (anarthria) occurred as an after-symptom in 4 of the severe cases of my series. Nystagmus occurred in 1 case, and squint with diplopia in 1. Multiple neuritis associated with weakness and marked wasting of the legs, the tibialis anticus muscles being most affected, occurred in 2 cases.

Many of the severe cases after the hyperpyrexia has subsided show a pyrexia, the temperature remaining for several days about 102° or 103°. In 1 case the fever lasted three weeks. Numerous blood cultures were made on these pyrexial cases with negative result. Recurrences of hyperpyrexia are very likely to occur after a heat-stroke attack unless the patient is kept in a cool atmosphere, but this is often impossible.

Treatment.

For the gastric type of case removal to a cool atmosphere, bicarbonate of soda in frequent full doses by the mouth, and free purgation give the best results.

The choleraic type of case is treated on similar lines to cholera.

Heat hyperpyrexia demands treatment with sprays of ice-cold water and fans, quinine bihydrochloride being given intravenously or intramuscularly if there is the slightest suspicion of malaria. Convulsions are treated by venesection, or morphia or chloroform inhalations.

[The prophylactic measures were fully dealt with by the author.]

SYPHILIS AT A VENEREAL CLINIC:

AN ANALYSIS OF CASES ADMITTED DURING TWELVE MONTHS.

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THE following notes are set forth merely as an analysis of cases that have been admitted to the clinic during the period August 31st, 1918, to August 31st, 1919. During this period of twelve months the methods of the clinic and the routine work have been uniform, and though the number of cases is small, some interesting features have developed, and may be of use in comparison with similar details from other clinics. 354 new cases of syphilis have been admitted during the 12 months, 229 males and 125 females; the ages of these patients have been analysed, and the admissions at various age-periods tabulated as follows:—

Age-period.	M.	F.	Age-period.	M.	F.
Under 1 year ...	3	7	Between— 40 yrs. and 45 yrs.	17	7
Between— 1 yr. and 10 yrs....	5	5	45 ,, ,, 50 ,, ...	14	6
10 yrs ,, 20 ,, ...	16	23	50 ,, ,, 60 ,, ...	5	3
20 ,, ,, 25 ,, ...	54	28	At 66 yrs.	1	1
25 ,, ,, 30 ,, ...	56	21	Not stated.... ...	3	3
30 ,, ,, 35 ,, ...	32	16	—	229	125
35 ,, ,, 40 ,, ...	23	5			

It must be observed that these figures are not ages of incidence of disease, but ages at which patients have sought admission to hospital, and it is noticeable that nearly twice (1·8) as many males are admitted as females, whilst a glance at the table will show that during the early years (1–10) and the later years the sex incidence of admission is practically the same; thus the real difference in the male and female admission-rate occurs between the ages of 20 and 50, and during this period more than twice as many males as females are seen.

There are doubtless many reasons for this, but it seems likely that the knowledge of the existence of clinics and the dangers of venereal disease as set out in propaganda literature and public notices generally is not reaching the female population to the same extent as the male; consequently steps should be taken at once to approach women more directly, either through existing organisations or by other special means.

This inference drawn from the table of age admissions of the two sexes is borne out by experience in the clinic, for whereas many men state that they have come up because they have seen the various public notices it is only very rarely that women say this; further, whereas many men seek advice before any sign of disease has appeared or has had time to appear, women do not come up until symptoms have developed, and these usually in the secondary stage. This point will be referred to again under the examination of the Wassermann-reaction results. One important conclusion apparently can be drawn from the 12 months' work: namely, that the female population is not yet aware of the dangers of syphilis and of the existence and facilities of venereal clinics to anything like the same extent as the males, and that active measures to remedy this are urgently needed.

Absentees.

In every out-patient department of a general hospital there are always a certain number of patients who come once or twice and then disappear, and a venereal department suffers in this respect perhaps more than others, for two reasons: firstly, the venereal patient is apt to be a casual person, and not one given to much thought; and, secondly, because the régime is not such a comfortable one as that of an ordinary medical out-patient department. Considering these two points, it is surprising how relatively few patients do become absentees.

Out of 354 patients admitted with syphilis during the 12 months only 58, or about 16 per cent., have failed to complete the full course, and of these only 24 failed to complete the first three injections. These figures seem fairly satisfactory, but it would be interesting to know the experience of other clinics where a full routine is employed. The sexes are represented in these figures, thus:—

	M.	F.
Failed to complete first three injections ...	16	8
Failed to complete full course	25	7

If a patient fails to report at the clinic at his proper date his number is noted on a black list, and at the end of two months, if the absence still continues, a printed letter is sent to him informing him that his non-attendance has been noted, and that he is advised to come again for further advice. Such a letter, in a large number of the absentee cases, either brings the patient up again or produces a letter explaining the absence, which in the case of the men is generally that they have left the district in search of employment. This is a point of some importance, and as a practical inference it might be urged that in the notices issued by the L.G.B. as to clinics great stress should be laid on the necessity of continuity of treatment. If patients are compelled to leave a district the transfer form should be completed, and advice asked as to where they are to report themselves in the new district. These transfer forms are not sufficiently used.

I have laid stress on this, as it has seemed at times that discontinuity of treatment is worse than no treatment—that is to say, that symptoms of recrudescence after an incomplete course of salvarsan are occasionally more intense than the same symptoms would have been at the same period in an untreated case; this, however, is merely a clinical impression and cannot be supported by observed data.

Marital and Congenital Cases.

The next point of interest was the number of marital cases, and in this series of 354 the number was 42, or nearly 12 per cent. Of these, 14 wives infected their husbands and 28 husbands infected their wives—that is, twice as many males were unfaithful as females. This is not the place to discuss ethical questions, but though this figure is admittedly large, if the abnormal mental and physical strain of the past three years is taken into account it is not large enough to warrant some of the gloomy statements that have been made lately on the platform and in the press.

During the 12 months, 29 cases, or about 8 per cent., of congenital syphilis have been admitted and treated, 10 males and 19 females, and these may be divided into two groups, the infantile congenital syphilis and the "lues tarda." The first group includes the snuffles, dermatoses, anæmias, &c., while the latter group comprises keratitis, otitis, &c., and these two groups are represented as follows: Infantile group, 14 admissions; "lues tarda," 15 admissions.

Most of the first group came up from the maternity and child-welfare centre, whilst the second class of case generally comes from the special departments of the hospital. These cases have all been treated by means of intravenous or intramuscular injections of neo-salvarsan, and the results in the babies have been very satisfactory; the keratitis cases have not shown the same improvement, though here I have seen sufficient benefit, particularly in the younger cases, to warrant a much more sanguine prognosis than is usually given. The cases of otitis have not reacted so well and, from those I have personally treated, my conclusion would be that once the eighth nerve becomes involved the deafness is steadily progressive, a fact possibly due to the enclosed course of this nerve.

It would be of great benefit if at every maternity and child welfare centre there were facilities for doubtfully syphilitic babies, possibly the subjects of syphilis, to be seen at the centre by a venereal medical officer, who could at once transfer them to the clinic if treatment were considered necessary. Dr. H. Scurfield, the medical officer of health of Sheffield, has kindly granted me facilities for seeing any such doubtful cases, and I have found this privilege extremely valuable, as congenital syphilis is not always an easy thing to diagnose. To miss cases at present is almost a national disaster, not only on account of the individual child, but from the fact that the mother is very often unaware of any taint in herself. It may be mentioned here that pregnant women are carefully watched, and the full course of salvarsan given up to the middle of the seventh month (one case has been carried on up to the beginning of the ninth) without any ill results to the mother, and as early as possible after the baby is born the mother brings it up for inspection. Two fine babies have been born during the 12 months of mothers who have had complete courses, and though the time since their birth is very short (one is 10 months old) they are still both apparently healthy infants.

Incidence of Clinical Types.

Primary cases.—For the purposes of this analysis a case has been called primary when the presence of a sore is noted without any other signs of the disease except inguinal adenitis, and the number of cases falling into this category during the 12 months is 47, or 13 per cent., and of these only 5 were females. Primary cases (47): males, 42; females, 5.

A striking fact about these cases is that of the 42 men 31, or roughly 74 per cent., gave a negative Wassermann reaction when first seen, whilst of the women not one had a negative blood; in other words, the women present themselves later than the men, even though a few do come up during the early stage of the disease. This emphasises the conclusion drawn from the age-table previously given.

	Males.	Females.
Primary cases with negative Wassermann	31	0
" " " positive "	11	5

Secondary Cases.

Unfortunately, this type of case still furnishes the largest number of admissions, and there is obviously a great deal of work necessary before the general public is sufficiently alive to the advantages of early treatment and the dangers of quack methods. A large number of men who come up during the secondary stage confess to having sought advice from such unauthorised sources, and many more attempt to carry out home treatment of their own devising.

The number of secondary cases has been 238, or 64 per cent. of the total admissions, made up as follows: males 147, females 91.

Tertiary cases.—Forty cases of tertiary syphilis have been admitted, 30 males and 10 females. This figure is purposely kept small, as it seems clear that venereal clinics are not primarily intended for such cases, but a certain number have been put on the register for the sake of watching the effect of salvarsan on such conditions as aortitis and locomotor ataxia. Other cases of tertiary syphilis are given anti-syphilitic treatment, but are not put on the venereal department register as it seems unfair to saddle the department with the added financial burden of this type of case.

Wassermann Reaction.

During the routine course of treatment the blood is examined on three occasions, before the first injection, after the fourth, and also after the seventh, and on the results of these examinations, together with clinical evidence, the further conduct of the case depends. Each case must be judged on its own merits, and no hard-and-fast rules can be laid down, nor do I wish here to go into the details of how such decisions are arrived at, as this paper is intended merely as a summary of the work done at the clinic, and only one or two conclusions based on the year's work are mentioned. The facts elicited do not present any new features, but their recital may be useful.

Primary cases.—Of the primary cases, 47 in all, 31, all men, were admitted with negative W.R., and in none of these has the reaction subsequently become positive. Sixteen of these have completed their course; the remaining 15 are still under treatment. Of the 16 completed cases, 5 have had one Wassermann test after two months' observation, during which time treatment is limited to daily inunction with mercury, and two cases have passed their second period of observation (5 and 9 months respectively after admission), all with completely negative Wassermann reactions.

Of the 16 primary cases admitted with positive reactions, 13 have completed the course, and of these the Wassermann was negative in 11 on the second test (by which time—45 days after admission—1·3 g. of salvarsan have been given with 4 gr. of mercury) and has remained negative. Of the other 2 cases, one became negative after the fifth injection, and the other gave a doubtful negative after the last injection of the routine course. This last case is interesting, as there was an intermission of three months after the third injection. This behaviour of the Wassermann reaction leads to the view that only in the earliest stage, with a negative W.R.—that is, before it has become positive—can treatment be depended on to keep the W.R. permanently negative; once the W.R. has become positive, though it may be reduced to negative by active treatment, sooner or later it again becomes positive with or without symptoms. This is well seen in the secondary cases, who, of course, all give a strongly positive W.R. at the commencement of treatment.

Secondary cases.—Fifty-five have been picked out of the total number of secondary cases as these have all completed at least a full course and have had all the necessary tests recorded. Of these, all starting with strongly positive (+ + +) bloods, 34 have given negative W.R. (−) at the end of the course, 4 have given a doubtful negative (±), 15 have remained positive (+) all through. These reactions I have grouped as A, B, C.

Amongst the routine questions put to each patient is one to elicit, if possible, the time of infection and date of onset of symptoms, and these two dates have been worked out for the cases falling into the above three groups, and the period of time elapsing between infection and commencement of treatment is shown in the following table.

Group.	A.	B.	C.
Average number of days since infection	70	92	89
Average number of days from onset of symptoms to starting treatment	36	66·5	65
W.R. at completion of treatment	−	±	+

From these figures it seems quite clear that in those groups B and C, where the W.R. did not become negative, the time intervals are considerably longer than in group A. One would have expected group C to show the longest time intervals, but in this series such is not the case, and it is possible that the difference between ± and + in these cases is really small. It is interesting to note that the average age of these groups becomes progressively higher, thus: average age, group A, 26·2; B, 28·7; C, 30·8. It is possible that this may eventually be found to have some bearing on the blood reaction and account for the readings in group C; at present, however, the figures are accepted as they stand.

The interval "onset of symptoms to commencement of treatment" is a much more accurately-determined one than "date of infection to commencement of treatment," since the average out-patient dates all events from the various feasts, Easter, Whit-Sunday, and so forth, and the exact date of any particular exposure to infection is generally rather hazy in consequence. In groups B and C this interval is nearly twice that in group A, and seems to render the blood more stable positively (+) and a negative W.R. more difficult to produce.

The cases in Group A all gave a negative W.R. after 81 days' treatment, but of the 34 in this group only 15 have been under observation sufficiently long to note the result of the further test, that is, two months after cessation of active treatment; of these, 7 have remained negative, whilst 8 have become positive again. These groups could be further split up into various classes according to the reactions to the test, but the numbers dealt with are too small to warrant such minutiæ, and only the broad facts shown in the three groupings above are of any value.

Two examples of groups B and C, which may be called the "retarded" groups, may be given as typical records of the way the W.R. behaves under treatment.

Example.

		1	2
First day of treatment. Complete course.	W.R.	+++	+++
Last day of treatment. Follow-on course.	W.R.	+	+++
End of F.O.C.* course. Two months' observation.	W.R.	−	−
End of this period. Second F.O.C.	W.R.	+	±
End of this course.	W.R.	−	−

* Follow-on course (F.O.C. = 0·3, 0·4, 0·6 grms. "606" at fortnightly intervals; 1 gr. Hg intramuscularly weekly).

All these records emphasise the fact that where a long interval has occurred between the onset of symptoms (or date of infection) and commencement of treatment—that is, where a positive W.R. has been long established—the latter can only temporarily be made negative. This opens up the difficult question of whether in late syphilis a positive W.R. reaction should necessitate active antisyphilitic treatment in every case, the answer to which question must be left open for the present. It is extremely difficult to determine the point at which active treatment must cease, and no general rule can as yet be formulated, but one frequently sees patients who have no sign or symptom of disease and who are clinically perfectly fit yet whose W.R. has returned to positive after two months' cessation of treatment. On the strength of such positivity a second full or modified F.O.C. course is given, producing a negative W.R., which, again, often becomes positive after a second period of "no treatment." Should such a patient receive a further course at this stage? Each case must be judged on its own merits, but it seems to me that too much stress can be placed on the W.R. in these cases, and the possibility of a permanent cure with a + W.R. must be kept in mind. It will be some years yet before this question can be definitely answered, and the best one can do at present is to keep the patients as far as possible under observation and on the appearance of any symptoms, however mild, to urge further active treatment.

Summary.

1. Primary cases are still in a grave minority of admissions.
2. Women do not seek advice in the primary stage, and steps should be taken to disseminate knowledge of the dangers of venereal disease and the advantages of the clinics amongst the female population.
3. Continuity of treatment is essential for cure, and discontinuity a possible danger.
4. Only where treatment is commenced before the W.R. has become positive can a cure be definitely promised.

A NOTE ON THE LATER HISTORY OF FOUR CASES OF TOTAL LARYNGECTOMY.

BY SIR CHARTERS SYMONDS, K.B.E., C.B.,
CONSULTING SURGEON TO GUY'S HOSPITAL.

THERE are some operations for the removal of malignant disease of the tongue, pharynx, and larynx which leave such a condition of misery that they had better not have been performed. And moreover, if recurrence takes place, the suffering is far greater than if the disease had been left to run its course. This view was at one time taken of complete laryngectomy, against which it was further urged that, unable to speak, reduced, in fact, to dumbness, such a person could neither be useful nor find any joy in life. Experience has happily revised these views, and has shown that a man without his vocal apparatus can not only communicate with his fellows, but conduct a business involving a fair amount of conversation.

The object of the following note is to exhibit, as far as can be done on paper, the condition of four people, three men and one woman, who have lived in comfort and happiness, and done useful work for 8, 12, 15½, and 22 years respectively. One—the woman—has died of old age, and it will be seen that hers was the most extensive of all the operations. The importance, in view of possible recurrence, of estimating before operating the possibility of complete removal cannot be overestimated, especially where the pharynx is concerned. A primary pharyngeal cancer extending to the larynx cannot, in my experience, be removed with any prospect of eradication, and the after-condition is one of such misery as to render all such undertakings unwise and even unjustifiable. Particularly is this the case when a fixed and deep-seated mass of glands complicates the condition.

Record of Cases.

These records have a value also in showing the immunity that can be obtained even when the disease is extensive. These people can be understood of those around them by simple lip-movements and the vibration of such an amount of air as can be taken into the mouth and pharynx, while with the tube presently to be described the patient can be heard in a large room.

CASE 1.—Mrs. G. When seen in 1897 was wearing a tracheal tube and had complete laryngeal obstruction. The growth could be seen fungating upwards through the larynx, and there was also some external fullness. The entire larynx, together with a wide area of the pharynx, both lobes of the thyroid gland, with underlying lymphatics, were removed. On account of the wide removal of the pharynx there was some

stenosis which for a time gave rise to difficult deglutition. This improved and she carried on her duties in her hotel for some years. Thyroid extract kept her free from the evil effects of hypothyroidism. Writing to me this year and recording her death at the age of 76, 22 years after operation, her son-in-law tells of her many years of usefulness and the happiness of her life. She was able to converse with her family and friends without any effort, and I have on several occasions spoken with her myself.

CASE 2.—J. B., aged 52, was admitted to Guy's Hospital with a growth nearly filling the larynx; it arose from the left side, and there was also some external fullness. On opening the larynx it was seen that only the anterior part of the right cord was free. On separating the skin from the left side with a view to partial laryngectomy it was found that the disease involved the muscles, and therefore complete removal was decided upon. The left lobe and the thyroid gland, together with subjacent lymphatics and parts of the infiltrated muscles, were removed in July, 1904. The wound healed rapidly without the escape of any saliva. This man, now aged 67, is an assessor and collector of taxes in a large area in Sussex. His duties necessitate a good deal of conversation, and he can make people hear and understand without the speaking-tube, which is necessary, however, when there is much noise or where others are deaf, or, again, when he attends a business meeting. J. B., it will be gathered, holds a responsible public position, and, I may add, is one of the happiest men I have ever met. Some years ago, at one of my clinical lectures, he was able to make everyone in a fairly large theatre hear quite distinctly with the aid of his tube. It is now 15½ years since his operation.

CASE 3.—Mr. McC. was a chemist attached to a commercial firm. In September, 1904, one cord was removed for suspected growth. In January, 1905, an operation was necessary on account of swelling, which proved to be due to some septic sutures. On April 24th, 1911, tracheotomy was performed, and on the 28th the larynx was again opened and some growth removed which was said not to be malignant. Recurrence taking place, tracheotomy became again necessary on June 15th of the same year. The late Sir Barclay Barron sent him to me in July, 1911. As the case appeared from the history to be doubtful, I removed a piece for examination; on this proving to be cancerous, on August 4th I removed the entire larynx, together with the lobe of the thyroid gland and subjacent lymphatics. Healing was by primary union, and the patient returned home on August 26th. A year later, a recurrence taking place in the lymphatics on the left side, on July 19th, 1912, I removed parts of the laryngeal and sterno-mastoid muscles, the internal jugular vein together with the lymphatic track down to the clavicle. From this he recovered rapidly, and returned home on the 27th of the same month. The seven years and more during which this man had laryngeal symptoms indicate the chronic form the growth assumed. He was seen by Sir Henry Butlin and others. The growth when I saw him blocked the larynx, and was of a hard cicatricial variety, partly due no doubt to the effect of the two operations. Reporting upon his speaking on Oct. 21st, 1919, Mr. McC., now aged 63, says that at first he could not sniff up the odours of the chemicals, but this he soon overcame. He says: "I only occasionally use the detachable tube for speaking, for I get along quite intelligibly with my intimate friends without it, while a Belgian friend assured me that on my reading Flemish to him he had not the slightest difficulty in understanding me. In the shops, local post office, &c., where I am known—if the place is quiet—I can do without the tube, and very often, when stopped by strangers asking for information, I unconsciously answer them without the tube, and I am surprised to find that I have been understood apparently quite well. The greatest difficulty I have is in making myself heard in a room where a number of people are talking." It will be gathered that this is a contented and happy man, and is a most useful person besides, for his wife, who suffers from bad health, has been dependent upon his care all these years. It is now eight years since the laryngectomy.

CASE 4.—Mr. T. Before his operation was manager of a bank, and was referred to me by Mr. Charles Heath and Mr. F. G. Harvey, in October, 1907. The growth involved the anterior three-fourths of the right cord and extended forward beyond view. Two years before he lost his voice suddenly for a time, and for a year he had been hoarse and obliged to discontinue his duties. The first laryngeal examination was that made by Mr. Heath. On Oct. 16th, 1907, the thyroid was split and the growth removed. Recurrence ensuing, complete laryngectomy was performed in February, 1908. Writing on Oct. 23rd, 1919, he says he is now 58; he manages shopping and ordinary conversation without the speaking-tube where he is known. In his own house he converses freely with his family, and used to call his children downstairs and also amuse them in his own way. He uses the speaking-tube with strangers. A medical friend who lately saw Mr. T. thinks his powers of speech quite marvellous. Mr. T. was obliged to resign his position, as naturally he could not continue the management of a public concern. Had he possessed a private business he might well have carried on his work. He has helped his wife in the management of a boarding house, and has added to the larder by fishing. It is now 12 years since the laryngectomy.

Remarks.

This brief account is sufficient to show that all the patients have lived in comparative comfort, and have been useful members of the family. The immunity has been largely due, no doubt, to the wide initial removal of structures external to the larynx.

The avoidance of preliminary tracheotomy certainly facilitates the operation, and, moreover, diminishes infection. The technique is also a matter of some importance, and may be described in a later communication.

As to the age at which laryngectomy may be safely undertaken I may add that in September, 1919, with Dr. C. F. Routh, of Southsea, I removed the entire larynx from a lady over 70 years of age. Tracheotomy being imminent for recurrent growth, and her voice almost gone, I thought she would be more comfortable without her larynx than with a necrosing growth, a tracheal tube, and at the same time without a voice. She recovered rapidly without any fistula, and suffered very little shock from the operation.

The Speaking Tube.

The tracheal tube is of large size, slightly conical, and fits the trachea closely; it has no inner tube. It is inserted as soon as the trachea is brought forward at the operation. Fitting into this is the special apparatus for speaking, which has a flap-valve admitting air on inspiration. This valve closes on expiration, the air passing through a tube attached to the upper surface and thence into a rubber tube, by which the stream of air is carried to the lips. A vulcanite piece fits into the distal end of the rubber tube, the end of which is flattened and the orifice narrowed so as to deliver a broad and forcible stream of air. The exit tube, to which the rubber is attached, should have as wide a diameter as possible, and should be a good inch from the shield so as to carry the rubber clear of the chin.

This is the simplest form of apparatus in use, and as will be gathered from the accounts given by the patients, enables them to speak clearly under almost all conditions. My own efforts to introduce a sounding reed into the tube have not been successful. I found the rubber valve of a motor cycle horn answered for a short time. The lips, however, very soon became glued together from the moisture and ceased to act. Those who have not observed the effect produced when the lip movements are made in the air current can hardly appreciate the clearness and loudness of the resulting utterance.

INTRAVENOUS INJECTION OF TARTAR EMETIC IN GUINEA-WORM INFECTIONS.

BY J. W. S. MACFIE, M.B., CH.B., D.SC. EDIN.,
PATHOLOGIST, WEST AFRICAN MEDICAL STAFF, GOLD COAST.

IT is still the common practice among the natives of West Africa when infected with guinea-worm to wait until the worm protrudes, then seize it and attempt to pull it out. The usual result is that the worm is broken and troublesome abscesses follow which may render the patient unfit for active work for a long time. Sir Patrick Manson[1] has described the sequelæ in a graphic manner, which, as it could hardly be bettered, may be quoted in full.

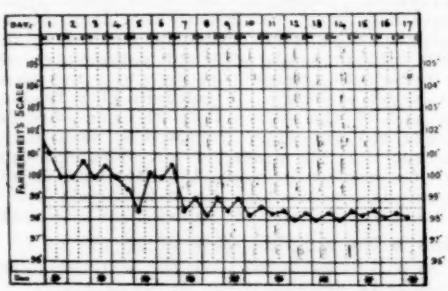
"The consequences of this accident," he writes, "were often disastrous. Myriads of young escaped from the ruptured ends into the tissues, and violent inflammation and fever, followed by abscess and sloughing, ensued; weeks or months perhaps elapsed before the unhappy victims of this rough surgery were able to get about. Too often serious contractions and ankyloses from loss of tissue and inflammation and even death from septic trouble resulted."

Even if the worm is not broken the process of extracting it is a tedious one; care must be taken to protect it from injury all the time, and the traction should not be begun until the embryos are all discharged, an act which is only completed, according to Manson, in from 15 to 20 days. Any treatment that would kill the worm in situ and the embryos would therefore be valuable.

Record of Cases.

During the last few months of 1919 ten cases of guinea-worm infection in various stages were treated at Accra by means of intravenous injections of tartar emetic. All the patients were natives. I have pleasure in thanking Dr. A. J. R. O'Brien and Dr. M. W. Fraser for very kindly giving the injections to some of the patients, and for permitting me to watch the effects. The following are brief histories of the cases:—

CASE 1.—Native man, aged 20. Guinea-worm of the front of the left leg pointing about half-way between the knee and the ankle. Part of the worm had been pulled out and broken off, leaving the greater part still in the leg. On admission the leg was much swollen and very painful, the guinea-worm sore was suppurating, and the patient was suffering from fever. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 5th, 7th, 9th, 11th, 13th, 15th, and 17th days—a total dose of 9 gr. The temperature of the patient came down to normal on the 7th day. On the 8th day the guinea-worm sore was still discharging slightly, but it healed up a few days later, and on the 17th day the patient was discharged from hospital apparently cured. No pieces of the worm had come away during treatment. Up to the 48th day after the cessation of treatment there had been no recurrence, and the scar where the guinea-worm had pointed remained firm and healthy.



Temperature chart of Case 1. An asterisk denotes each day on which was given an intravenous injection of 1 gr. of tartar emetic.

CASE 2.—Native man, aged 23. Guinea-worm of the left leg near the knee-cap. The head of the worm had just appeared at the opening in the skin. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 5th, 7th, and 8th days—a total dose of 5 gr. The sore healed six days after the first injection, and the patient was discharged from hospital on the 9th day apparently cured. The worm did not come away. The patient, still apparently quite well, left Accra a fortnight later. A month (30 days) after the cessation of treatment he was seen at Koforidua, to which town he had been traced, by Dr. F. H. Storey, who very kindly sought him out and examined him for me. At this time the leg appeared to be perfectly sound, the guinea-worm scar was firmly healed, and no sign of the worm had been seen since leaving hospital.

CASE 3.—Native man, aged 30. Guinea-worm of the outer side of the left foot. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 5th, 7th, 9th, and 11th days—a total dose of 6 gr. On the 10th day the sore appeared to be healing, but a week later it reopened, and living embryos were found in the discharge. Three days later the worm protruded from the sore and was secured; it was slowly wound out during the nine days following. In this case the treatment with antimony did not appear to have any beneficial action.

CASE 4.—Native man, aged 24. Guinea-worm of the calf of the right leg. Leg much swollen down to the ankle. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 5th, and 8th days—a total dose of 4 gr. Already on the 3rd day the swelling of the leg had subsided considerably. The sore was healed by the 9th day, when the patient was discharged apparently cured. The guinea-worm did not come away. A week later (eight days after cessation of treatment) the patient was seen again; the guinea-worm scar was to all appearances soundly healed. Unfortunately, the man left Accra soon after this and was not seen at a later date.

CASE 5.—Native boy, age 15. Guinea-worm of the right leg, on the outer side of the calf. The presence of the worm had been observed two weeks earlier, but the sore had begun to discharge only on the day he was first seen. The discharge contained living embryos, but the guinea-worm itself was not visible. Intravenous injections of tartar emetic were given on the 1st, 3rd, 5th, 7th, 8th, and 10th days, ½ gr. on the first occasion and 1 gr. thereafter—a total dose of 5½ gr. On the 5th day the worm protruded, and the boy pulled out and broke off about 8 in. of it, leaving the rest of the worm in the leg. No abscess formed as a result of this unwise action, but the discharge continued until the 10th day, when it was very slight in amount and contained only a few motionless embryos. On the 13th day the sore appeared to have healed and a week later was in the same condition. Three weeks (21 days) after the cessation of treatment the scar appeared to be soundly healed.

CASE 6.—Native man, aged 47. Guinea-worm of the left leg, half-way between the heel and the middle of the calf. Two weeks earlier the worm had protruded, and a small piece of it had been pulled out and broken off, leaving the remainder still in the leg. When first seen the sore was granulating and discharging a watery fluid, in which, however, no embryos were found. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 4th, 6th, 8th, 10th, and 12th days—a total dose of 6 gr. The sore dried up in three or four days, and appeared to be completely healed on

[1] Tropical Diseases, sixth edition, p. 775.

the 14th day, when the patient was discharged from hospital. When last seen, 12 days after the cessation of treatment, the scar appeared to be soundly healed.

CASE 7.—Native man, aged 30. Guinea-worm of the outer side of the left foot. The worm, which had first shown itself nine days earlier, was pulled out on the day the patient was seen, and about 3 in. of it broken off, the remainder being left in the leg. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 5th, 7th, 9th, and 11th days—a total dose of 6 gr. The case was complicated by an abscess near the heel of the foot, which had to be opened on the 5th day. On the 7th day a guinea-worm (not the same one as had pointed on the outer side of the foot) appeared in the incision made into the abscess cavity; this worm was wound out. The original guinea-worm sore was almost closed on the 9th day, but on the 14th day about 5 in. of the worm came away, and the sore was not completely healed over until the 19th day. Six days later—that is, 14 days after the cessation of treatment—the sore appeared to be soundly healed.

CASE 8.—Native boy, aged 18. Guinea-worm of the outer side of the left foot. The worm had first appeared four days earlier; none of it had come away. The discharge from the sore contained living embryos. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 5th, and 7th days—a total dose of 4 gr. After the fourth injection the boy ceased to attend for treatment, and it was found that he had left Accra and could not be traced. The ultimate effect of the treatment is therefore unknown, though he appeared to be doing well.

CASE 9.—Native man, aged 30. Guinea-worm of the inner side of the right foot. The foot was swollen and appeared to be forming an abscess; the sore was not open. A month earlier about 1 in. of the worm had been pulled out and broken off, and two weeks ago about 8 in. of it had been similarly removed. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, and 5th days, and on the 9th day, owing to a mistake, ½ gr.—a total dose of only 3½ gr. Almost immediately after the treatment was started the foot began to improve, and by the 10th day it appeared to be cured. When last seen, on the 13th day after cessation of treatment, the foot appeared to be sound.

CASE 10.—Native woman, aged 22. Guinea-worm of the inner aspect of the right foot, close to the ball of the great toe. The foot was much swollen and very painful. The worm had first appeared a week earlier, and 2 in. of it had been pulled out and broken off. The sore was discharging purulent matter. Intravenous injections of tartar emetic, 1 gr. each, were given on the 1st, 3rd, 6th, and 8th days—a total dose of 4 gr. Further treatment could not be given because the patient went away on the 9th day and was not seen again. At the time of the last injection the condition of the foot had improved considerably and the guinea-worm sore was almost closed.

Remarks.

In five of the ten cases the whole guinea-worm was still in the body at the time when treatment was begun. In two (Cases 2 and 4) the sore healed under treatment, and the worm did not come away; one of these cases was seen a month and one a week after the cessation of treatment, and appeared to be cured. In one (Case 5) part of the worm was pulled out and broken off during treatment; this case, nevertheless, did well and was apparently cured. In one (Case 3) the sore closed temporarily, but reopened, and the worm was eventually wound out. One (Case 8) was lost sight of at an early stage.

In five of the cases part of the guinea-worm had been pulled out and broken off before treatment was begun; all these cases showed signs of acute inflammation of the affected limb. The inflammation subsided and the guinea-worm sore healed in three of these cases—1, 6, and 9—the portions of the worm which had not been pulled out remaining in the body but causing no inconvenience. One (Case 7) was complicated by the presence of a suppurating wound, so that the effect of treatment was not clear. And one (Case 10) was lost sight of at an early stage.

In all but one (Case 3) of the cases treated intravenous injections of tartar emetic, even in the small doses given (3½ to 9 gr.), appeared to have a beneficial action. They appeared to relieve the inflammation caused by the breaking of the worm, to effect the healing of the sore without the previous removal of the worm, and to shorten the duration of the affection. In most of the cases it was impossible to continue the injections as long as had been intended, either because the patients had left Accra or because they themselves had concluded, perhaps prematurely, that they were cured and in no need of further treatment. In the cases which were longest under observation it appeared as if the antimony had killed the guinea-worm in the body and allowed it to be absorbed. If this was actually the case the treatment would also, it may be hoped, kill guinea-worms which had not yet reached the surface. This would be an important property, as patients often develop a succession of worms.

Conclusion.

The observations recorded here fall very far short of a thorough test of the treatment. The total number of cases is exceedingly small, the appropriate dose of antimony has not yet been determined, and in the important matter of after-treatment observation they are conspicuously defective.

Accra is provided with an excellent pipe-borne water-supply, and guinea-worms are fortunately rare. The ten cases dealt with were collected one by one, only with the greatest difficulty. The occasional cases that are met with at Accra are, for the most part, in strangers and visitors to the town. Such patients are unsuitable subjects for the trial of a new treatment, because their attendance is irregular, and they can seldom be kept under observation after they are apparently cured. There are many more suitable places for the study of guinea-worm infections, and I can only hope that the observations recorded in this paper may lead to a full investigation in them of the therapeutic value of antimony.

The Laboratory, Accra.

A CASE OF ABNORMAL DESCENT OF THE TESTICLE.

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THE following case, in which the testicle descended through the crural canal into the scrotum, the inguinal canal being absent and a bubonocele complicating the picture, is interesting in that I have not been able to find reference to a similar one in the literature at my disposal.

The patient, a well-developed boy of 2, was admitted to Mr. T. Kay's wards in the Royal Infirmary suffering from threatened strangulation of a right bubonocele. The bowel slipped back without manipulation after admission, and I operated on Dec. 13th with a view to performing an ordinary radical cure of an inguinal hernia. Mr. Kay, who kindly gives me permission to report the case, had been operating on another patient,

but saw the condition, and Dr. J. Dunbar, who was assisting me, confirmed the various points.

On exposing the external oblique the external ring could not be made out, and the cord was therefore picked up and isolated, when it was found to run into the abdomen through an aperture which did not admit the little finger. This aperture was situated below Poupart's ligament, and to the outer side of the spine of the pubes. The tip of the little finger, inserted with difficulty at a later stage, made out what appeared to be Gimbernat's ligament to the inner side, but it did not present the usual sharp margin. Below was the bone, covered with fascia, while on the outer side was a firm structure which was probably a misplaced reflexion from Poupart to the pubes, described in some books as separating the muscular from the vascular compartment —the ilio-pectineal band.

On applying gentle traction on the cord the scrotum became invaginated and the testicle came into view: The testicle was normal, and its attachment to the base of the scrotum undoubted. The hernial sac lay among the structures of the cord, and the vas was adherent to but separable from it. As the sac terminated about half an inch above the testicle the hernia was not of a congenital or infantile type. On opening the sac a soft yellow mass was found projecting into its interior, and springing from the outer and posterior wall of the sac. As its surface was glossy it was apparently covered with peritoneum, and it appeared to be embedded in the sac wall. Traction failed to bring this structure down to any appreciable extent, and hence its nature and connexions could not be determined. As it was not adherent to the tissues outside the sac, and presented no obstacle to introduction of the sac as a pad on the deep surface of Poupart, further examination was deemed inadmissible. I have seen a similar structure in the sac of a sliding hernia, and it is probable that the termination of the appendix or cæcum was close at hand, but this is surmise, as these parts were looked for but not found. If it was a portion of the plica vascularis it was separated entirely from the testicle, and terminated about one and a half inches above it.

The conjoined tendon was closely applied to the posterior surface of the external oblique and came down to, and appeared to fuse with, Poupart's ligament. There was no arching of the fibres of the conjoined, such as is normally present, and hence the transversalis fascia was not exposed to view.

The operation as such presented no points of special interest, and the patient is doing well. The testicle on the left side was very small, and was situated about the upper end of the scrotum. It was difficult to determine the route taken by the cord, but the femoral ring was certainly unduly large.

The condition here reported is apparently a very rare one, as Eccles, in his "Imperfect Descent of the Testicle," 1903, says: "Recent dissections during a radical operation upon the accompanying hernia have not shown the cord lying in the femoral ring, but always in the superficial abdominal ring."

SYPHILITIC SPONDYLITIS: NEGATIVE WASSERMANN REACTION.

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AND
C. F. MARSHALL, M.D. VICT., F.R.C.S. ENG.

SYPHILITIC spondylitis is a rare condition. Verneuil[1] appears to have been the first to draw attention to it in 1879, and Fournier[2] the first to describe a case in detail about the same time. Previous cases were probably regarded as tuberculous. In Fournier's case the lumbar vertebræ were affected, the patient died of cachexia and general dropsy, and the lesions found at the autopsy were as follows: Sclerosing osteitis with purulent and caseous infiltration, almost complete destruction of one of the intervertebral cartilages, a large cavity in the lumbar spine, double psoas abscess, a gumma in the fourth left lumbar nerve, and atrophy of the gluteal muscles. The patient also had multiple gummas in the subcutaneous tissue and muscles, syphilitic orchitis, and cirrhosis of the liver and kidneys.

The case we report resembles Fournier's in affecting the same vertebræ, but differs in the absence of cavitation of the vertebræ, abscess formation, and muscular atrophy. In our case the process of new bone formation predominated over bony destruction. This is characteristic of most cases of syphilitic spondylitis and distinguishes them from tuberculous disease.

The patient, a man now aged 38, contracted syphilis in 1905. Treatment by oral administration of mercury was commenced during the primary period and continued for two years. Secondary symptoms were absent except for mild sore-throat. In 1911 he went through a six months' course of treatment, consisting of weekly injections of mercurial cream and iodide of potassium in doses of 15 up to 60 gr. daily as a precautionary measure previous to marriage, although no symptoms had occurred since 1905. In 1914 he began to suffer from pain and stiffness in the back, which was diagnosed as lumbago. As this did not improve with ordinary treatment, a Wassermann test was made, and this was negative. In 1916 the lumbar pain became worse, especially on rising from a sitting position, and he complained of pain down the left thigh. At this time nodes developed on the inner end of the right clavicle and on the inner malleolus of the right ankle, and he suffered from severe headaches, mental irritability, and insomnia. Except for the node on the clavicle, which persisted, all these symptoms yielded to treatment with large doses of iodide of potassium and mercurial inunction.

The Wassermann reaction in 1917 was again negative. He then had a course of six intravenous injections of salvarsan at monthly intervals, after which his general health improved and the lumbar pain disappeared.

However, after the fourth salvarsan injection he had sudden acute pain in the right loin resembling renal colic. A radiogram taken at this time was negative for renal calculus, but revealed lesions of the lumbar spine consisting of pronounced bulging of the outline at the level of the second and third lumbar vertebræ on the right side and at the level of the third and fourth vertebræ on the left side. These swellings were due to new bone formation on each side of the intervertebral cartilages, the contiguous vertebræ being thereby united by bony deposit bridging over the cartilages, thus accounting for the rigidity of the lumbar spine.

The present condition is as follows: General health good, although there is some thickening of the radial arteries. The lumbar spine is quite rigid, but painless. Remains of node on clavicle still present. Reflexes normal. No paresis or atrophy of muscles. Wassermann reaction negative.

Remarks.

Noteworthy features of this case are the rarity of the lesion, its occurrence in spite of treatment, and the persistently negative Wassermann reaction, the first test being made when the vertebral lesions were in active development. All tests were made at reliable institutions, the first and second in Government laboratories in India and the third in a well-known London hospital. This case would therefore appear to serve as a warning against placing too much reliance on the Wassermann reaction, both as regards diagnosis and prognosis.

[1] Gazette des Hôpitaux, 1879.
[2] Annales de Derm. et de Syph., 1881.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

CLINICAL SECTION.

EXHIBITION OF CASES.

A MEETING of this section of the Royal Society of Medicine was held on March 12th, Sir ANTHONY BOWLBY, the President, being in the chair.

Traumatic Aneurysmal Varix.

Dr. W. G. SPENCER showed a case of Traumatic Aneurysmal Varix between the Cavernous Sinus and the End of the Internal Carotid Artery on the Left Side. The patient, aged 26, whilst on duty in France, was kicked by a horse on the left side of the head in February, 1918. He was unconscious for a time, but did not bleed from his ear or nose. After recovering consciousness he continued mentally dull, occasionally vomited, and complained of headache. Two weeks later clear fluid under excess of pressure was drawn off by lumbar puncture. Increasing œdema of the eyelids was noted early in March and he was transferred to hospital with the diagnosis of fractured base of the skull. No sign of fracture could be found by X ray examination. The most obvious features were venous engorgement of both upper eyelids, especially the left, and proptosis, which was also most marked on the left side. There were chemosis of the ocular conjunctiva of the left eye and paralysis of the left external rectus. The man complained of a continuous rushing noise in the head on the left side. A loud systolic souffle was heard over the forehead; it was loudest over the upper eyelids and eyeballs, but could be heard more faintly over the left temporal region, the face, and along the line of the carotid in the neck. When the left carotid was compressed the souffle was not heard.

The left common carotid was ligatured at the level of the cricoid cartilage seven weeks after the accident. On tightening the ligature the souffle disappeared, but was soon heard again at the root of the nose and more faintly over the upper eyelids. The venous engorgement of the eyelids rapidly diminished. There was no optic neuritis, but complete and permanent paralysis of the left external rectus. Afterwards he was unable to do more than light work. Headaches were very variable. The rushing noise gradually returned; when he pressed his left eyeball outwards the noise seemed to stop for a moment. When admitted to hospital at the beginning of the year the souffle was heard at the root of the nose and less loudly over the forehead. It could also be heard, more faintly, in the right infra-orbital region, but not over the left temporal and facial region as before the first operation.

The right carotid artery was ligatured in January, 22½ months after the left. Before tightening the ligature his head was lowered to the level of the trunk, and he was let out somewhat from the anæsthetic. The tightening of the ligatures caused deep anæsthesia, with stertorous breathing and contracted pupils. He was kept in bed with the head horizontal; he fainted several times when being moved or dressed, and did not get up for six weeks. Since the second operation he had not heard a noise unless his head was sideways on the pillow. He complained of headache at irregular times and the usual remedies did not relieve him.

Mr. Spencer said that he presumed that in this case there was a pinhole communication between the left cavernous sinus and the dilated end of the left internal carotid. The anterior communicating and the intracranial part of the ophthalmic arteries might also be dilated. There was no positive sign of any aneurysmal sac formation, apart from the arterial dilatation, nor any sign of thrombosis of the cavernous sinus. He hoped that the bilateral ligation would control a tendency to further dilatation; the most marked effect had been the relief to compression of the left cavernous sinus.

The PRESIDENT said that it was difficult to make a prognosis in such cases, for some got well, others remained in statu quo, and others got worse. He instanced the case of a man, wounded in the region of the zygoma in the South African war, who applied for treatment on account of the intensity of the noise in his head. As the result of keeping him quiet in bed in the course of a month or two he was so much better that he no longer desired an operation. Gradual recovery resulted in a spontaneous cure in about two years. In another instance a man who had been riding a bicycle was found unconscious on the road at some distance from his bicycle. He remained unconscious for several days. In his case, also, the condition often termed pulsating exophthalmos developed. He was an elderly man with thickened arteries, and operation seemed inadvisable. He also got perfectly well in two years. There was no doubt that in young people an operation was indicated to cure the patient. This was clearly so in Mr. Spencer's case, whom he congratulated upon its success.

Microcephalia: Craniotomy Performed.

Mr. SPENCER also showed Two Microcephalic Sisters, the children of first cousins, shortly after craniotomy. The parents were both healthy, aged between 20 and 25, and except that they were first cousins there was nothing in their family history which bore on the condition of their children. They were anxious that something should be tried, and Mr. Spencer, at their request, after a consideration of Horsley's first case, decided to operate. The children, one aged 3 years and the other 1½ years, were in good general health. Except for the calvarium, deficient hair, and general dwarfing, they presented no deformity. They had all their teeth, and these were practically perfect. The development of the calvarium had been arrested so as to give them the repellant aspect of anthropoid apes. The elder was unable to walk more than a few steps; she could not feed herself, was dirty in her habits, could say nothing except "Bad"; could only sit up, toss her arms, and fumble with toys, and did not otherwise amuse herself; had violent fits of temper, in which she bit herself and threw herself backwards so as to strike the back of her head. Her hair was very scanty. The younger child was unable to walk or stand, could only say "Bad" and "Mum," was dirty in her habits, did not play or amuse herself but merely tossed her arms, was uncertain in temper and unable to feed herself, had no idea of obedience, and had no hair on her head. The operation was performed on the older child at one sitting and caused no perceptible shock. On the younger child it was done in two stages at a fortnight's interval. There was little shock after the first and more after the second. At the operation a strip of bone about 3 cm. in breadth was removed from each parietal bone, and a strip about 1 cm. in width from the frontal bone a little in front of the coronal suture. Both skulls were thin, like those of a baby under a year. The lines of the sutures were occupied by ridges of soft bone. There was nothing abnormal about the exposed dura mater. The intracranial pressure was not above normal. The children were now in the same condition as before the operation; the gaps made in the skull showed no signs of intracranial tension. In the region of the left parietal eminence of the younger child the brain could be felt protruding and pulsating under the scalp.

Hysterical Manifestations.

Dr. HILDRED CARLILL showed a young woman with Hysterical Manifestations in the Eye and Stomach. There was a history of "vomiting" since 1915 and after every meal for nine months. For three months she had noticed that her eyes were insensitive. The "vomiting" was regurgitation merely, unaccompanied by the usual signs of vomiting, and could be produced at will. When seen for the first time the ocular conjunctivæ were insensitive, as was the corneal conjunctiva in one eye; the palpebral conjunctivæ were also insensitive. The corneal reflex was present.

Dr. F. PARKES WEBER said that he regarded the case as an example of acquired merycism or human rumination. The patient had acquired the power of bringing food from the stomach back into the mouth, and could

then either swallow it again or expel it. If she expelled it the act constituted a kind of "voluntary vomiting," which she could make use of to excite sympathy or interest in her case. (Dr. Carlill had said that she had likewise produced artificial skin trouble on her legs.) With regard to the eyes, he (Dr. Parkes Weber) had found that she closed the eyelids sharply when he touched the corneal conjunctiva.

SECTION OF SURGERY: SUBSECTION OF ORTHOPÆDICS.

EXHIBITION OF CASES.

A MEETING of this section of the Royal Society of Medicine was held on March 2nd, Mr. J. MUIRHEAD LITTLE, the President, being in the chair, when cases were exhibited.

Osteosclerosis of the Femur.

Mr. LAMING EVANS showed a case of Osteosclerosis of the Femur in a man aged 34. He had had pain in the left hip, thigh, and knee since September, 1916, which had continued without intermission. He had been treated by hot air, electricity, and baths both in London and at Buxton for 18 months. Six injections of salvarsan had been given on the chance that the case was syphilitic, although a Wassermann test had always proved negative. He complained of continuous pain in the left thigh both by day and night, for which slight relief was afforded by very large doses of aspirin. The left thigh showed three-quarters of an inch of atrophy as compared with the right. A slight thickening of the left femur could be felt at the junction of the upper and middle thirds. Local heat, redness, or swelling of the soft parts was absent. X ray examination showed an osteosclerosis of the shaft of the femur involving the whole circumference of the shaft, but more marked upon the median segment, and extending through the middle and upper thirds as far as the lesser trochanter. The outlines of the sclerosed bone were smooth and the internal structure was well defined. The medullary canal was not encroached upon, and there was no evidence of necrosis or chronic abscess. The treatment suggested was exposure of the femur on its median surface, and a longitudinal linear osteotomy exposing the medullary cavity throughout the length of the sclerosed area.

New Growth Formation.

Mr. EVANS also showed the X ray photographs of the left thigh of a man, aged 43, who had complained of pain in this position in February, 1919, together with swelling, which started just above the left knee and had gradually increased in circumference and spread upwards. Old-standing scars in the region of the right iliac bone suggested osteomyelitis in infancy. The right hip-joint was freely movable. In January, 1920, when he came under observation, he said that he had lost 6 st. in the preceding 12 months. The left thigh showed a hard fusiform enlargement in the lower three-fourths, involving the femur. X ray examination showed a fusiform thickening of the middle third of the femur, with spicules of bone projecting obliquely from the shaft. In February an incision on the inner side of the middle of the thigh exposed a cavity containing semi-solid gelatinous material. At the bottom of the cavity the periosteum was thickened and studded with bony spicules. An incision on the outer side of the thigh exposed a growth formation three-quarters of an inch thick attached to, and growing from, the periosteum. A section of this growth was shown. A report of the semi-solid material stated that a few streptococci and staphylococci were found, but the specimen was almost sterile. The tissue cells present were almost entirely lymphocytes, together with a few endothelial cells. The specimen appeared to be an inflammatory exudate.

Mr. R. C. ELMSLIE said that there were three points which made him think that the case was not one of sarcoma: (1) in the microscopic section there was no evidence of the presence of sarcomatous tissue, but only the signs of infiltration and chronic inflammation; (2) in one skiagram there was definite curvature of the femur; and (3) in one there was an appearance suggestive of the presence of a long sequestrum. He thought the condition was one of chronic osteomyelitis, and that, for some reason, the periosteum had taken on the spiky form associated with sarcoma.

Mr. V. WARREN LOW agreed as to the probable presence of a sequestrum.

Achondroplasia in a Girl.

Dr. W. T. GORDON PUGH showed a case of Achondroplasia in a girl, aged 7 years, who was 35½ in. high, the height of a child of 3½ years. She presented the characteristics usually found—the stunted arms and legs contrasting with a trunk of normal length, the short fat "trident" hand with digits all nearly of the same length and showing the deviation of the ring from the middle finger, and the dorso-lumbar kyphosis closely resembling that found in rickets. The clavicles, sternum, and ribs were, as usual, unaffected; the child was bright and fairly intelligent; skin, hair, and thyroid appeared normal, and the Wassermann reaction was negative. The stunted bones of the limbs had broad ends, the shafts were not abnormally bent, and there was full movement of all joints except the elbows. These joints could not be fully extended by about 30°, and there was cubitus valgus, the deviation outwards of the forearms being about 35°. Her measurements in inches, as compared with those (in brackets) of a control child of the same age, were: height, 35½ (43); from the base of skull to infragluteal fold, 19½ (19½); from infragluteal fold to sole, 10 (19½); from acromion to tip of fingers, 13 (19½); humerus, 5 (7½); ulna, 5 (6½); femur, 6 (10½); tibia, 5¼ (9¼); between anterior superior spines, 6 (6½); girth of skull 21 (20). X ray photographs showed that the bone in the epiphyses was less than normal, whilst the diaphyses showed a slight cupping indicating that the periosteal bone had not been completed by the addition of enchondral bone, which the epiphyses normally deposits at the end of the diaphyses. The ætiology of the condition appeared to be still unsettled. By some it had been thought to be simply a biological variation similar to that which exists in certain breeds of dogs. It had been suggested that it might be due to under-secretion by the pituitary, thyroid, and thymus, and over-secretion by the interstitial glands. Jansen, of Leiden, eight years ago, produced evidence that this disturbance in the development of the skeleton might have resulted from pressure on the fœtus at a very early period, from the third to the sixth week, by an amnion, either too small or over-distended with fluid. In respect of treatment he suggested that, having regard to the fact that the pituitary body had been found reduced in size in severe cases, the prolonged administration of small doses of pituitary gland might possibly stimulate growth, although it would never cure the achondroplasia. He did not know whether this had been tried. Recently Professor Arthur Keith had declared that although experiments on the thyroid had failed to produce achondroplasia, and microscopical examination had revealed no change in the thyroid gland, these cases might safely be grouped as a growth disturbance due mainly to alteration in some of the functions of the thyroid body. It was generally agreed, however, that thyroid medication had no influence on their growth.

Exostosis of the Radius.

Dr. PUGH also showed a case of Exostosis of the Radius in a boy aged 15 years, the exostosis being about an inch and a half wide and raised about half an inch, arising from the lower end of the radius just above the epiphyseal line. The boy said that he had noticed it about two years and thought that it had grown recently, especially since he knocked it a few weeks ago. It gave him no trouble at present, but as he wished to enter the navy it would probably be advisable to remove it.

Mid-carpal Fracture Dislocation.

Mr. R. C. ELMSLIE showed a case of Mid-carpal Fracture Dislocation in a man, aged 38, who had had an accident to his left hand in January, 1916. He was in the hold of a ship, and a heavy sling swung against him, threatening to pin him against the side of the hold. He protected himself by holding out his hands and knee. The sling forced the left wrist into a hyperextended position. The condition was treated in a military hospital as a fracture. The hand

recovered to a certain extent, but the condition had for a long time been stationary. The styloid processes were at the normal level; on the posterior surface of the wrist the ends of the forearm bones were less prominent than on the right side, and the posterior surface of the carpus was more prominent. The wrist was usually held in a straight line with the forearm, and only about 30° of flexion, and no extension was possible from this; no abduction or adduction was possible. X rays showed a fracture of the scaphoid and semilunar, one-half of the scaphoid remaining in apposition with the radius; the rest of the carpus was dislocated backwards. The styloid processes of both radius and ulna had been fractured. He proposed to remove half of the scaphoid fractured and the semilunar.

Cyst of the Tibia.

Mr. ELMSLIE also showed a case of Cyst of the Tibia in a boy aged 10 years. About a year ago the patient fell, striking the left knee on the ground. He walked home, and the same night a swelling appeared which implicated the whole of the knee, accompanied by much pain. A week later he was seen by a doctor, who put on a bandage. The patient was not confined to bed at all. After the application of the bandage the swelling decreased, but had never disappeared. There had been some pain ever since, but no hindrance to walking, except when he had been using the legs for some time. The boy was healthy, and had always been so. There were a few palpable glands in the neck. There was no wasting of the lower limbs, and the reflexes were normal. In the left knee region there was a rounded, hard, semi-spherical swelling 2 in. in diameter, situated on the internal surface of the head of the tibia. The skin moved freely over it, and there were no signs of inflammation. At present there appeared to be no implication of the knee-joint. There was no limitation of movements, no tenderness, no shortening, and no other abnormal bony condition. He proposed to open the cavity, curette it, and crush the wall.—In answer to a question by Mr. P. B. ROTH, Mr. Elmslie said that in cases of cysts of the femur, humerus, and tibia upon which he had operated healing had taken place satisfactorily, the bone around had sclerosed, but a slight cystic appearance had remained for years. In no case was there further growth or expansion or recurrence. Pain was relieved.

Mr. ELMSLIE also showed a case of Congenital Absence of the Tibiæ in a girl aged 13 years and 8 months. The deformity was congenital, and no treatment had so far been carried out. The tibia was absent in both the lower limbs, the patella and the condyles of the femur being apparently normal. The head of the fibula on either side was large and articulated with the outer side of the external condyle. The feet were in severe talipes varus; on the right there were four toes, with a deep cleft between the first and second, as in a lobster-claw deformity. On the left side the great toe was absent. The child got about well on the knees. He proposed to amputate at the knee on each side, and would present a further report on the anatomy of the parts removed at a later meeting.

Mr. ELMSLIE also showed a case of Birth Palsy with Dislocation of the Head of the Radius. The patient, a girl aged 15½ years, had a deformity of her right arm since birth. She had been born in hospital and both arms were said to have been injured. No treatment appeared to have been carried out. The arm was held a little away from the side, with the elbow flexed and the forearm supinated. Movements of abduction and rotation at the shoulder were restricted. Full extension of the elbow was impossible, and pronation of the forearm was also absent. Active use was present in all the muscles of the limb except the pronator radii teres, but the deltoid, triceps, and extensors of the wrist and fingers were weak. The muscles all reacted to a faradic current, including the pronator radii teres. An X ray photograph showed a forward subluxation of the head of the radius and a great prominence in front of the tuberosity. The chief interest of the case consisted in the supination deformity and in the presence of the subluxation of the head of the radius. He did not think that excision of the head of the radius was advisable, as it would probably weaken the arm, and the girl got very good use out of the hand with the condition as at present. He proposed to limit treatment to manipulation and exercises for the joints and electrical treatment of the weakened muscles.

After referring to the rarity of supinator birth deformity, Mr. Elmslie said that it was probably due in this case to subluxation of the head of the radius and a consequent tightening of the biceps muscle, which held the head of the radius in that position during growth. It was not due to any weakness of the pronator radii teres.

A Case for Diagnosis.

Mr. P. B. ROTH showed a case for diagnosis. It was that of a boy, aged 4 years, with waddling gait. He had never walked properly, but always with the toes turned out, rocking from side to side with each step. He had previously been treated for a time with long external splints, but these had not been able to keep the legs from turning. He had suffered from rickets, as evidenced by slightly curved tibiæ and enlarged lower radial epiphyses. The gait was characteristic of double congenital dislocation of the hip, but the radiogram showed no abnormality of outline of bones to suggest this condition. When lying supine abduction of each thigh was limited to 45°. The thighs were kept rotated out 80°, but could be turned so as to make the toes point straight up, using moderate force. Mr. Roth said that he had since been informed by Dr. Martin Berry that in all probability this was a case of torsion of the femoral shaft.

Dupuytren's Contraction.

Mr. ROTH also gave a report on the case of Dupuytren's Contraction in a man, aged 31, whom he had shown before the section in November last. The ring finger of the left hand was the finger involved. He had operated on him by Adams's subcutaneous method. Under chloroform eight or nine punctures were made into proximal parts of the tense fascia with a fine tenotome, and the fascia divided at each part by turning the blade of the tenotome down into the palm. Traction was simultaneously made on the flexed finger, and, as each part was divided, the finger gradually straightened until it lay completely extended. A straight splint was applied and kept on for a week, after which it was removed during the day, but applied for a further two weeks at night. The result had been a complete cure, with full power of extension and flexion.

SECTION OF OPHTHALMOLOGY.

EXHIBITION OF CASES AND SPECIMENS.

An ordinary meeting of this section was held on March 3rd, Mr. W. T. HOLMES SPICER, the President, being in the chair.

Iridotomy.

Mr. J. HERBERT PARSONS showed a patient who last year came up for extraction of an immature cataract; the opacity was chiefly in the posterior cortex. He did an ordinary extraction, with a peripheral button-hole, and a tiny hole in the periphery of the iris afterwards. The patient did well, and went out in ten days with the eye quiet. A week later, however, she came with a hypopyon and a flaring iritis, which he attributed to endogenous inflammation. He took her in and treated her in the ordinary way, and the pupil became very small, in spite of atropine and hot bathing, and was later completely blocked. He described the method of iridotomy he carried out.—Mr. M. S. MAYOU confirmed Mr. Parsons's account. He first saw the operation done by Mr. McHardy many years ago.

The PRESIDENT and Mr. TREACHER COLLINS had also performed the operation.

Sensitive Vestibular Nystagmus.

Mr. LESLIE PATON exhibited a patient in whom Nystagmus of Vestibular Origin was very easily excited—namely, by pressing wool into her ear. A fistula existed from the vestibular region into the middle ear. She had choroiditis and other visual defects, but he did not bring her because of those. He also showed a patient with Blue-dotted Cataracts. In cases of this

kind which had been reported the vision was but little interfered with, and the ophthalmoscope showed that not much opacity was evident. With correction this patient's vision was 6/12 in one eye and 6/9 in the other. Probably the blue tinge was not due to the presence of pigment, but to a refraction peculiarity. He quoted Lord Rayleigh's explanation.—Mr. C. WRAY said he had seen several cases in parents and children.—Mr. N. BISHOP HARMAN spoke of cases in which the presence of such blue striæ and dots was associated with night-blindness.

Mr. M. S. MAYOU showed a case of Gummata of the Eyelid which began on the tarsus. The erosion of the eyelid had been quite rapid, and could be seen to progress even while she was awaiting the Wassermann report. Salvarsan had produced great improvement in a short time.

Mr. W. H. MCMULLEN exhibited a case of Congenital Aniridia. He brought it forward because it was associated with some signs of glaucoma. It was very difficult to see the discs, but they appeared to be cupped, and on palpation the ocular tension seemed to be increased. He asked for views as to the operation most suitable.—Some speakers favoured cyclo-dialysis in preference to trephining.

Mr. MCMULLEN also showed a case of Translucent Cyst in the outer part of the orbital margin, firmly adherent to the roof of the orbit and loosely attached to the tarsus.

Sir WILLIAM LISTER referred to an interesting case of his own in which a cyst of the lacrymal gland went behind the globe. The patient, a boy, came with proptosis of the left eye, which became worse and pushed the eye downwards and inwards. He did Kronlein's operation, and having removed the triangular portion of bone he made a horizontal incision through the periosteum, and, having separated the orbital fat, encountered a very black tumour. He was proceeding to separate this when it suddenly burst and the contents disappeared. It was mixed up with the lacrymal gland and the external rectus. Healing occurred by first intention, and the vision, which had gone down to 6/24 with marked papillœdema, returned to 6/6, and there was only slight contraction of the field remaining.—Mr. WRAY suggested that dissection would be much easier if part of the cyst contents were evacuated by preliminary puncture and then a ligature passed round it.—Mr. H. R. JEREMY referred to a case in which he removed a cyst from the inner side of the upper lid, and the microscopist found it was lined with squamous epithelium. He regarded it as a transplantation cyst, and suggested that that might be the nature of Mr. McMullen's case.—Mr. LESLIE PATON said Mr. Jeremy removed a cyst of Krause's gland, and in such cases it was not advisable to puncture before removal if it could be got away without.

Cards for Testing Colour Vision.

Dr. F. W. EDRIDGE-GREEN showed, by means of the epidiascope, a set of cards for testing varieties of colour vision by natural light. The set contained neither letters, figures, nor any easily identifiable geometric form to assist any candidate who wished to escape the test. The exhibitor explained fully the scheme for detecting trichromics, tetrachromics, and pentachromics.—Mr. PARSONS said that the scheme was most ingenious, but pointed out how difficult it had always been to ensure, in printed colour-test charts, that successive editions, or even separate copies, should contain exactly identical shades of colour, owing to the pigment changes in the lithographic stone.

Cobalt Glass for Detecting Errors of Refraction.

Mr. PATON read a short note on the Use of Cobalt Glass for the Detection of Errors of Refraction, especially small degrees of astigmatism. He demonstrated its use.—Mr. ERNEST CLARKE, while agreeing that this particular kind of glass showed that the violet rays were more refracted than the red, did not think it filled any very practical purpose for the ophthalmologist.—Mr. BISHOP HARMAN agreed with Mr. Clarke, and thought that the introduction of this kind of glass would cause some sensitive patients to worry needlessly over trivial astigmatic errors.

Mr. CHARLES GOULDEN read a paper on the Treatment of Prolapse of the Iris following Accidental Perforating Wounds, with a Note on the Removal of Non-magnetic Foreign Bodies from the Anterior Chamber, which was considered to be helpful by the PRESIDENT and Sir WILLIAM LISTER.

SECTION OF LARYNGOLOGY.

EXHIBITION OF CASES AND SPECIMENS.

A MEETING of this section of the Royal Society of Medicine was held on March 5th, under the presidency of Mr. E. B. WAGGETT.

The Laryngostroboscope.

Dr. E. W. SCRIPTURE submitted a description of the laryngostroboscope. This consists of a disc with 40 slits mounted on the axle of an electric motor. The light from an arc lamp is concentrated by condenser lenses, so that it passes at a focus through the slits. The beam is caught by another lens, it falls on a flat head-mirror, and is reflected by the throat-mirror to a focus at the glottis. Dr. Scripture said he had observed that for the chest register the vibrations take place along the entire glottis: for the head register the cartilaginous glottis is closed and the vibrations take place along the muscular glottis only.

Frontal Sinus Cases.

The meeting discussed a number of frontal sinus cases, shown by Mr. HERBERT TILLEY, Mr. LAWSON WHALE, Dr. JAMES DONELAN, and Mr. NORMAN PATTERSON, the debate turning chiefly on the respective merits of the intranasal as compared with the extranasal route.—Dr. DAN MCKENZIE said his experience of the intranasal operation had been, to a considerable extent, successful; it was not very severe to the patient, and gave relief from the acute symptoms. But he had had one death following it on account of osteomyelitis.

The PRESIDENT pointed out that the success of the internal operation depended on the anatomy of the part, and hence a stereoscopic skiagram was essential before arriving at a decision concerning the route to be taken. He had not yet had osteomyelitis develop in a case, but, like others, he went in terror of it. At the outer angle, the dangerous part, there should be a drainage-tube, and it should be retained five or six days. In the absence of a good skiagram, he advocated the use of the Doyen perforator in the external operation, then if the dura were encountered, the operation was robbed of danger.—Mr. CYRIL HORSFORD related two cases in which he had serious complications and the measures by which he successfully combated the danger.—Mr. J. F. O'MALLEY considered that both the external and the internal operations had their place in frontal sinus surgery, and the exercise of care would enable a decision to be made.

Radium in Malignant Disease.

Mr. DOUGLAS HARMER and Dr. N. S. FINZI showed a series of patients whose malignant disease in various situations had been treated by radium. In one of sarcoma of tonsil the radium had caused the tumour almost to disappear. In one of endothelioma of pharynx radium brought about a great reduction in size, and after a somewhat severe surgical operation X rays were administered. In a case of mixed parotid type tumour of the palate the success from the radium was moderate. An endothelioma of the palate was caused by radium to shrink rapidly. A case of what appeared to be carcinoma of the orbit was not improved by the radium imbedded. The last was one of a large fibro-angeioma of the naso-pharynx. There was rapid shrinking of the growth following radium application, but it was followed by extensive necrosis of the maxilla and perforation of the hard palate.

Mr. W. M. MOLLISON showed a patient with Lupus of the Palate. The Wassermann reaction was positive; no tubercle bacilli were found in the sputum.—Mr. HARMER said he had just cured in a month a similar case by the method of giving large doses of iodide of potassium and at the same time ionising the palate.

Other interesting cases were shown.

MEDICAL SOCIETY OF LONDON.

HEAT HYPERPYREXIA.

A MEETING of this society was held on March 8th, Mr. V. WARREN LOW, the President, being in the chair, when papers were read on Heat Hyperpyrexia.

Dr. W. H. WILLCOX spoke of the clinical aspect of the condition. An abstract of his paper appears in another part of our present issue.

Physiological Aspect of Heat-stroke.

Professor LEONARD HILL spoke from the physiological aspect. He said that heat-stroke was due to rise of body temperature to a height incompatible with life. The ultra-microscope showed the aggregation of particles in cell protoplasm increasing with the temperature. The heat-regulating mechanism might fail to control the body temperature under the atmospheric conditions or become exhausted. Sun-stroke was a form of heat-stroke, the absorption of the sun's energy by clothes or dry skin helping greatly to heat the body. The wet skin kept off sun-heat, this being dissipated by reflection and evaporation. The sun tempered by a cooling breeze burned the untanned skin, but could not cause sun-stroke. Men should become tanned so that they could wear thin cotton clothes open at neck, arm, and knee. Diet was of importance in the tropics, proteins with high heating power required to be reduced; temperance was essential, for alcohol, while supplying fuel value, could not supply the essential protein-building stores and vitamines. Monkeys fed on bananas and rice and given plenty of water could be trained to withstand exposure to the tropical sun. The sweating mechanism became developed with training.

Effect of enclosure by clothes and walls.—This, the speaker said, was very important. Air kept in contact with the body became warmed and saturated at skin temperature and heat loss became impossible. Rise of body temperature accelerated heat production, and a vicious circle resulted. The victims of the Black Hole died of heat-stroke. The body, weighing 70 kg., took some time to heat up, hence people withstood a hot bath or overcrowding in hot rooms for a time. Overheating the body increased the pulse-rate, lowered the systolic pressure, and lessened the power to compensate for the influence of gravity on the circulation. Those with circulatory defect or instability suffered first. Wind greatly increased the convective cooling power of air when the dry bulb was less than body temperature, and the convective warming power of air when the dry bulb was above body temperature. Wind greatly increased the evaporative cooling power of air so long as the dew-point was below body temperature. The kata-thermometer illustrated these facts. It was essential that a comfortable, cooling, and evaporative power should be secured in all workshops so as to prevent both over-cooling and heat-stagnation and increase efficiency, which was particularly lowered by the latter. To cite an example, with dry bulb at 89° and wet bulb at 73° F., conditions were intolerable in still air, comfortable in air moving at 1 metre per second. Suppose the air were saturated and the wet bulb were also 89° (not uncommon in Borneo), a wind of 9 metres per second (20 miles an hour) was required to give a comfortable cooling effect. Hence the enormous importance of fans and punkahs, of houses built in the tropics so as to keep off sun-heat and allow every breeze to blow through, of clothes thin, loose, and with wide openings for ventilation. Compressed air escaped cool and dry, and might be used as a cooling douche in conditions where wind did not suffice—e.g., in mines, where the wet bulb approximated to body temperature. Freezing appliances could be of little value for tropical houses; they were costly and unhealthy. A dry, hot wind, such as the simoon, might overcome the cooling power of the sweating mechanism. The wet skin reflected and evaporated off the sun-rays. The clothes and dry skin absorbed them, and black clothes much more than white. The pigment of the coloured races, by absorbing the sun-rays, prevented sunburn and activated the sweating mechanism. It allowed the skin to be thin and the blood-vessels superficial, so that those parts in the shade cooled readily. Heat-stroke was not an infectious disease; it could be produced in normal people under the exact conditions of the experimental chamber. It could be prevented by treatment based on the physical laws of cooling. The critical temperature demanding immediate relief seemed to be 107° to 108° F.

In moist still heat the cooling mechanism of the body failed in spite of being fully at work; as treatment a cooler environment must be secured. In dry heat the sweating mechanism became exhausted; a dry skin preceded and was the signal of impending heat-stroke. G. K. Hearne at Basra found that the patients with dry skin asked for the roof fans to be turned off. They were heated up just as the dry kata-thermometer was heated up by the wind, the temperature (dry bulb) being above body temperature. The sweating patients begged for the fans to be kept on; they were cooled as the wet kata-thermometer was cooled by the warm wind. After realising the danger of the dry skin he stopped all further cases of heat-stroke by water sprays and fans. The great point was to recognise the danger of the dry skin and to get the case under treatment before the temperature rose to a critical height. No other treatment but the spray and fan was required. Infection, constipation, fatigue, and drink, by weakening the heat-regulating mechanism, contributed to heat-stroke. Cramer had pointed out that both infection and exposure to a hot atmosphere caused hyper-action, followed by exhaustion, of the adrenals. Injection of tetrahydronaphthylamin produced pyrexia, with increased action of the adrenal glands, conversion of glycogen into sugar, &c. Cramer found that narcotics such as chloral counteracted this experimental heat-stroke. It was obvious that narcotics could not control heat-stroke in a man who had ceased to sweat and was in an atmosphere warmer than his body. The kata-thermometer indicated conditions of the atmosphere which were likely to cause heat-stroke. The surface temperature of a piece of black fur indicated the radiant energy of the sun.

Experiences in Mesopotamia.

Dr. A. FEILING spoke of his own experiences in Mesopotamia. He had been struck by the comparative rarity of heat hyperpyrexia in previously healthy men. He had seen a number of cases in a hospital for paratyphoid cases, of which he was in charge, and had found it advisable, if the temperature reached 103° F. or so, to cover the patients with sheets wrung out in cold water and to place them under an electric fan. If the heat regulating mechanism were disturbed heat hyperpyrexia might result even when the protection from the sun's rays was unusually complete. He also laid stress on the protracted nature of the convalescence in heat hyperpyrexia cases. Sweating was suppressed often for from 7 to 10 days and perhaps longer, and pyrexia recurred on the slightest provocation. Among the sequelæ was headache, very intractable in nature, perhaps lasting for many months. He had used the kata-thermometer and his investigations showed that free currents of air were essential in the prophylaxis. During 1917 and 1918 he had been greatly puzzled by a group of cases in which exhaustion, vomiting, and sometimes diarrhœa, were met with and in which the clinical picture was one of exhaustion and neurasthenia; possibly these were examples of adrenal exhaustion. He had obtained no success from venesection as a means of controlling the convulsions, and chloroform had sometimes been necessary. He had found it very difficult to produce sweating, though he regarded the suppression of sweat as a result and not the cause of heat hyperpyrexia.

Mr. CAMPBELL WILLIAMS asked concerning the after-results, and mentioned two patients who had become insane.

Blood Pressure a Factor in the Disease.

Mr. V. Z. COPE suggested that the greater prevalence among Europeans might be explained by the fact that they ate more meat. He regarded absence of sweating as a cause and not an effect. He had noticed that heat hyperpyrexia exaggerated the action of a small dose of

anæsthetic and prolonged the anæsthesia in a case. In another case in which there were jactitations the movements ceased when a pint of blood had been removed by venesection, but began again when a pint of saline had been injected. This suggested that blood pressure was a factor to be considered. Pointing in the same direction was another clinical experience. Two pints of saline were injected into a patient with subnormal temperature and prostration; this led to improvement, but hyperpyrexia then ensued.

Sir WILLIAM HALE WHITE regarded heat hyperpyrexia as due to a breaking down of the heat-regulating mechanism. The symptoms produced by tetra-hydronaphthylamin were distinct from those of heat-stroke. The greatest number of cases met with under peace conditions occurred in people with some affection of the nervous system.

Difficulties in Diagnosis.

Dr. P. MANSON-BAHR said that in Egypt he had met with only a few cases; they coincided with the prevalence of a hot wind. He laid stress on the importance and difficulty of the diagnosis from malignant malaria, with which heat hyperpyrexia had been often confused in West Africa. This was added to by the paucity of organisms in the peripheral blood in the first 36 hours of an attack of malignant malaria. Many patients harboured the parasites, but were without symptoms until the incidence of a heat wave, when cerebral malaria occurred. The microscopic evidence was, therefore, often deceptive in the early stages, nor was splenic enlargement very helpful. The distinction was important, for if cases of malignant malaria were treated as heat hyperpyrexia fatal collapse was prone to occur.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

CHRONIC HALLUCINATORY PSYCHOSIS.

THE ordinary quarterly meeting of this association was held at 11, Chandos-street, London, W., on Feb. 24th, under the presidency of Dr. BEDFORD PIERCE.

Dr. R. HUNTER STEEN, medical superintendent, City of London Mental Hospital, read a paper on Chronic Hallucinatory Psychosis. The contribution was founded upon a series of cases in which the principal symptom was the presence of hallucinations. As the hallucinations cause slight depression, some of the cases might be included under melancholia, while the development of delusions of persecution might lead to a provisional diagnosis of paranoia being made. Others, again, might be swept into the wide net of dementia præcox—an unsatisfactory state of affairs. He set out to show that there are hallucinatory cases which can be grouped together into a well-defined clinical entity, for which he proposed the term chronic hallucinatory psychosis. The most prominent of the hallucinations are the auditory. The patient may, for years, recognise that his hallucinations are morbid and unaccountable. These patients cannot at first be termed insane, hence Dr. Steen preferred the word "psychosis" to "insanity." In the absence of an explanation the patient tries to account for their presence, and there then results a delusion, mostly one of persecution. In the early stages such a patient is quiet and orderly, and the memory is good. The speaker quoted several typical cases, some of them from French literature. In one of Dr. Steen's cases, after the revelation to him of the subject of a severe mental conflict, there was marked improvement for three years, although at the end of that time the patient returned with the symptoms more persistent than ever. One patient definitely heard various animals talking to her and had symptoms of dissociation. In most of the cases—for it could not be regarded as a rare affection—careful research into the family history would reveal a strong hereditary tendency to nervous instability.

It seemed to be an affection of adult life, beginning between 30 and 50 years of age usually. It was met with mostly in women, and not those of the lowest rank of life. Some observers suggested that an illness like pneumonia might act as a predisposing cause, but that had not been Dr. Steen's experience. A history of physical injury might be met with. There was no known special morbid anatomy of the condition. Not one of his cases had died, and he did not know of any other observers having published accounts of post-mortem examinations in such cases. The phenomena could be best understood if approached from the psychical side purely, though several theories had been advanced founded upon material conceptions. Hallucination was the result of dissociation of the mind, directly produced by a mental conflict which had been sternly repressed, perhaps for a long time, in a person congenitally unstable mentally. Sleeplessness was not a prominent symptom except in the later stages of the disorder. In a late stage the expression became anxious, a listening attitude may be noted, and the voices may be conversed with. Violence may be threatened and suicide suggested. Though there are periods of remission, on the whole the disease steadily progresses in intensity, and, having reached its zenith, remains stationary for several years.

Differential Diagnosis.

Dr. Steen discussed the differential diagnosis of the condition from general paralysis of the insane, the manic-depressive group, true melancholia, the secondary and organic dementias, and paranoia, the last-named being the most difficult in the matter of differentiation. With regard to prognosis, the earlier a case is seen the more hopeful is the outlook. When delusions have developed but little can be done to avert chronicity. The general health is not affected, and there appears to be no danger of terminal dementia. In the early stages benefit is sometimes derived from a change of environment. Rest from work, freedom from anxiety, and change of air and scene should be advised, while plenty of nourishing food should be taken and the bowels kept regular. In some cases it is well to give an occasional hypnotic to secure sleep. If, however, small doses of the bromides or hydrobromic acid do not lead to improvement, a thorough mental examination must be made; it will probably bring to light a mental conflict which has caused the dissociation. The present difficulty of getting into touch with these cases in the early stage is likely to be less in the future, with the multiplication of mental out-patient departments attached to large hospitals.

Discussion.

The PRESIDENT did not consider that Dr. Steen had quite established the claim to regard the malady he described as a separate disease from paranoia. Paranoia was shown by Dr. Percy Smith, in his presidential address, to be an exact clinical entity. He (the speaker) asked how it was possible for a mental conflict to produce dissociation.

Dr. W. F. MENZIES said that this type of case became very demented in the course of 20 or 25 years, resulting in the patients becoming chronic lunatics. Post mortem, there was always found to be more or less thickening and chronic resolution. The cases were first called paranoia, and then chronic maniacs. These matters were not, he thought, to be regarded purely from the psychical standpoint; he believed that unless the anatomical, and especially the chemical aspects were also considered, there would not be much advance.

Dr. PERCY SMITH said observers in various countries who described paranoia had referred to acute hallucinatory paranoia and chronic hallucinatory paranoia: and included in the writings upon paranoia were almost all kinds of acute psychosis met with—even acute delirious conditions, which was absurd. It would be too sweeping to assert that in no cases of paranoia were there hallucinations. In the address which had been referred to he had pointed out that chronic hallucinatory cases, to which the term paranoia was properly applied, often began with a serious emotional disturbance. Many cases of paranoia had hallucinations. He thought it likely that psycho-analysis would help in the early stages of the cases described by Dr. Steen.

Dr. STEEN, in reply, said he was not prepared with an explanation as to how a mental conflict produced dissociation, but he entertained no doubt as to the fact, especially when the conflict was strongly repressed. He pointed to the case in his paper in which the revelation of this source of conflict was followed by relief for three years. He agreed there were hallucinations in some cases of paranoia, but paranoia was a disease characterised by delusions, with, as a rule, absence of hallucinations: certainly the latter were not characteristic of paranoia, while they were of the cases now described. In a review of the cases, the assumption of a causal physical basis had not afforded him any help, but an approach from the psychical side gave him a better insight into the condition. Early psycho-analysis, he believed, would enable many cases to recover.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

THE DIAGNOSIS OF GONORRHŒA: A STUDY OF 500 CASES.

A MEETING of this society was held at Liverpool on Feb. 20th, with Mr. MILES H. PHILLIPS, the President, in the chair, when Dr. W. W. KING (Sheffield) read a paper on the Diagnosis of Gonorrhœa, based upon an analysis of the first 500 cases under his care at the venereal clinic of the Jessop Hospital for Women, Sheffield. He divided the cases into two groups—those in which the gonococcus had been found ("proved" gonorrhœa), and those presenting the signs and symptoms of the disease, but where the specific organism had not been isolated ("clinical" gonorrhœa). The gonococcus was found in 60 per cent. of cases presenting clinical symptoms of gonorrhœa, but in a number of these was only isolated after repeated examinations. He estimated that from 70 to 80 per cent. of patients with the physical signs mentioned later were really suffering from gonorrhœa. Of the remaining 30 per cent. the majority were venereal, but in one case the infection appeared to be due to a diphtheroid bacillus present in the cervical and urethral discharge.

The symptoms complained of were discharge (yellow or white), pain on micturition, local pain and swelling, abdominal pain, menorrhagia, and irritation. Yellow discharge was present in over 70 per cent., and pain on micturition in about 30 per cent. of both "proved" and "clinical" cases. The physical signs noted were vaginal discharge, vulvitis, papillomata, leucoplakia, lesions of Bartholin's gland, urethral discharge or thickening, urethral caruncles, vaginitis, and affections of the cervix uteri. Vaginal discharge was present in 80 to 90 per cent. of all cases. Acute gonococcal vulvitis was not often met with, most of the cases seen at the clinic being in the subacute or chronic stages. In about 80 per cent. of cases there was a purulent urethral discharge, but in a small number the discharge was white in colour and composed of epithelial cells in which the gonococcus was sometimes found. Thickening of the urethra was most valuable evidence of past gonorrhœa in the female, and was comparable in this respect to stricture in the male. Infection of Bartholin's gland was only met with in 10 per cent. of cases.

The commonest evidence of cervical infection was purulent or muco-purulent discharge usually associated with a patulous condition of the external os. The combination of purulent discharge and patulous cervix was a helpful diagnostic sign, especially if the internal os was also sufficiently patent to admit a "dressed" probe into the uterine cavity. In more chronic cases the discharge consisted of a clear mucus, and this, coming through a patulous external os, produced a bull's-eye lantern effect which he had called a "magnifying" cervix. The magnifying cervix was typically seen in nulliparæ, but occurred also, though less strikingly, in women who had borne children. This condition corresponded to the gleet stage of gonorrhœa in the male, and occurred in about 15 per cent. of cases. The inguinal glands were rarely found enlarged in uncomplicated gonorrhœa. When enlargement was present he always suspected the presence of syphilis. Salpingitis was the most frequent complication of gonorrhœa met with (18 per cent. "proved" cases, 12 per cent. "clinical" cases). No case of gonococcal cystitis was noted in the series, although generally stated to be of fairly frequent occurrence.

Detection of the gonococcus in film preparation was at present the only certain method of diagnosis. The method of preparation of these films was important. "Dressed" wires were used for collecting the material which was dabbed—not rubbed—on to the slides. In this way, the leucocytes were preserved intact and the intracellular features of the gonococcus more easily observed. The importance of the urethra in the bacteriological diagnosis was shown by the fact that the organism, when found, was present in the urethral discharge in over 70 per cent. of cases. If found at all, the gonococcus was generally detected in the first five examinations, but in some cases not until the eleventh or twelfth. Cultural methods were extremely difficult to carry out with the highly contaminated pus present in the female. We must look, therefore, to some serum reaction which will put the diagnosis of the disease on a surer footing than at present. The technique of the complement-fixation test for gonorrhœa is at present imperfect.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—At a meeting of this society, held on March 4th, Professor J. B. Leathes read a paper on the Function of the Kidney in Nephritis. He began by referring to results described to the Association of Physicians in July last,[1] showing that two common failures in the cases of war nephritis examined were loss of diuretic response to the intake of water and absence of the matutinal alkaline tide, two independent phenomena, either of which occurred without the other. The persistence of the nocturnal urinary acidity throughout the first hours after waking showed that it was not to inability of the kidney to remove acid that a tendency to dyspnœa in such cases should be traced. The normal acidity of the urine in the evening and at night is normally accompanied by a considerable increase in the output of phosphate, and the fact that a diuresis induced by phosphate, unlike that produced by other agents, is an acid diuresis, suggested that the amount of phosphate excreted by subjects who exhibited no alkaline tide might be found to be high. But this was not the case; nor was the phosphate increased, as chloride and nitrogen output are, by the diuretic flood. Taking average figures from more than 100 tests, with the hourly output of water increased to four times as much as it was during the night, the hourly output of phosphate fell at the same time to two-thirds of what it had been before the diuresis, a proportion observed equally when there was and when there was no alkaline tide. Cushny has shown that a partial obstruction to one ureter, hindering the escape of urine, tends to diminish the volume and increase the acidity of the urine from that kidney as compared with the other. Obstruction in the tubules, due to the presence of red blood corpuscles or blood clots, conceivably might account for diminished volume with increased acidity in some of these cases; and it was observed that it was particularly in cases that persistently passed granular casts (which can be shown to contain altered blood pigment and from which hæmatin can be prepared) that this combination of small volume and high acidity was common. Another peculiarity found in cases of nephritis, the tendency for the retention of chlorides rather than of urea, might also be accounted for by films of blood clot on filtering surfaces, if it were shown that clotted blood exhibited the properties in regard to permeability which characterise red blood corpuscles—namely, permeability to urea but not to sodium chloride. Experiments with blood clotted in thin layers on dialyser membranes have been begun, and so far have shown a remarkable impermeability of the clot to sodium chloride. Whether this may account for the phenomenon common in these cases of nephritis the experiments are not yet sufficient to decide. The very great majority were clearly cases of acute glomerulitis in which hæmorrhage from glomerular tufts is probably one of the earliest disturbances, and in some degree is probably constant.—Professor A. J. Hall, Dr. A. E. Barnes, Dr. A. E. Naish, Dr. R. G. Abercrombie, among others, took part in the further discussion.

[1] Brit. Med. Jour., August, 1919, p. 165.

Reviews and Notices of Books.

PRACTICAL PHARMACOLOGY.

For the Use of Students of Medicine. By W. E. DIXON, M.D., F.R.S. London: Cambridge University Press. 1920. Pp. 90. 7*s.* 6*d.*

THE old materia medica is passing away, with its study of barks and roots and seeds and the preparation of mysterious compounds by bored and unwilling students. In its place has arisen the newer study of the action of the drugs in man and animals with more or less successful attempts to explain the way in which they affect disease. In most schools this discipline precedes attendance in the wards or, at the latest, is taken in the beginning of the clinical work, when the student is still unfamiliar with the aspect of disease and can hardly be expected to follow very closely the changes wrought by treatment. This position in the curriculum, necessitated by the close dependence of pharmacology on physiology, results in a certain want of reality in the treatment of the subject, and in order to remove this a number of books on practical pharmacology have been issued of late years, chiefly in the United States. In some of these the student seems to be expected to spend his time, which must apparently extend over months, in performing experiments on animals, which would be formidable operations for a trained physiologist, and in which one would suppose that the chief interest must lie in the preparatory operation rather than in the drug action which it is expected to illustrate.

Professor Dixon's little book avoids this spectacular method and deals largely with such facts as can be demonstrated in simpler ways, with test-tubes and frog muscles and hearts, and in that way seems admirably adapted to give the student some insight into the way in which drugs affect living tissues. It begins with the action of drugs on proteins, ferments, and protozoa, and proceeds in succeeding chapters through experiments on striped and plain muscle and blood to those on the heart and blood-vessels, glands, and central nervous system. The excretion of drugs is treated of, and some experiments to be done on the students themselves are suggested. We hope that this chapter may be expanded in future issues. Nothing interests the student more, and nothing can be more useful than the examination of his fellows for symptoms, especially if he is not informed beforehand what drug has been given. The final chapter on the physical (it used to be the "sensible") properties of drugs would shock the old teachers of materia medica by its brevity, but is on the right lines.

While we are not prepared to endorse all the statements made by Professor Dixon, we can cordially commend this book to the attention of teachers. Even if they differ from the author in many points, they will find—what many are seeking—a type of practical work to give their students as a substitute for the old practical materia medica, of which they have begun to doubt the utility.

GUNSHOT WOUNDS.

Contribution à l'Étude du Traitement de Plaies de Guerre par la Méthode Mencière. By Dr. FRANCIS BRABANDER, Médecin Aide-Major de 2e classe. Paris: Ollier-Henry. 1920. Pp. 142.

THIS is a monograph describing Dr. Louis Mencière's method of treating gunshot wounds. The method consists of introducing into the wound a mixture of iodoform, guaiacol, eucalyptol, balsam of Peru, alcohol, and ether. It is claimed that with its use excellent results were obtained—and no doubt they were an accompaniment. It is noted, though, that before using the mixture the wound should be excised and all foreign bodies removed. Most surgeons agree now that the ideal treatment of war wounds is early excision and early suture, and that the additional employment of any of the innumerable antiseptics which have been vaunted is of the minimal importance.

THE HEALTH OFFICER.

By F. OVERTON and W. J. DENNO. London and Philadelphia: W. B. Saunders Company. 1919. Pp. 512. 20*s.*

THE Ministry of Health has many problems before it and among them not least in importance is the position of the medical officer of health. Is he to remain a servant of the local authority, or is he to become a State official? Is he to devote his time entirely to hygiene, sanitation, and the preventive side of medicine, or is he to be brought into closer touch with the general practitioner and the curative side? Questions such as these cannot be determined without careful thought, and advantage is gained by learning what is the position of health officers in other countries than our own. Already we have learnt much from America—as, for instance, from Alex. Flexner in relation to medical education—and we can obtain further valuable light upon the possibilities which lie within the duties of a health officer by considering how this office is worked in the States.

A useful book for this purpose has just been published, and we gather therefrom that in the States the health officer steers a middle course between local and State supervision. "A health officer derives part of his authority from the State laws and part from local ordinances. When he acts under a State law he has the prestige and power of the State to support him. But when he acts under a local ordinance he is not always sure of the support of the local board of health. If he has the active coöperation of his board of health he may be reasonably sure that he has sufficient power to carry out his work. If the board is lukewarm or hostile, he can do little under the local ordinances." Legislation in the States would appear to be on somewhat different lines from those followed here. First, there are certain statute laws which lay down the broad principles of hygiene. Each State, however, has its own laws. Then come sanitary codes, which lay down in detail the way in which these principles shall be administered. These codes only apply to definite districts and areas which adopt them, but once adopted they have full legal power. "The universal intent is that the State Department of Health shall assume command when actual danger is at hand, and at other times shall act as a kindly teacher and counsellor to the local health authorities. For example, a state department of health will examine a public water-supply, and if the water is not pure, it will point out the sources of pollution and will advise the local authorities regarding remedial measures; but if the pollution produces sickness, the State Department of Health may take charge of the situation and compel the local authorities to remedy the conditions."

Beyond these ordinances the health officer seems to have a wide discretion, thus, "public sentiment and the courts grant almost dictatorial powers of the health officer in the presence of an epidemic," and as long as his actions can be held to follow within the broad principles of the statute law, he would appear to be able to act on wider lines than those to which the sanitary codes of his district might be held to restrict him. In the States as well as here development in the outlook on medicine appears to be progressive, and "the health officer is expected to improve social conditions which foster physical defects and sickness. He is also a physician to the strong and the well, and seeks to maintain a high standard of health and efficiency in a community. The next great development in medical practice will be the treatment of the well, and in this movement the leaders will be the health officers." More often than in this country the health officer appears to be a general practitioner practising in the area for the general health of which he is responsible; and the possibility of drawing closer the preventive and curative side of practice seems to be easier.

The authors of this book hold that even to-day a practitioner has double duties. "Those who employ a physician have a right to expect that he will advise them not only how they may recover from sickness, but also how they may prevent the sickness from developing

again in the future, and from spreading the disease to other persons. The laws and sanitary code of New York State recognise these obligations, and require physicians to perform specific duties which make them an official part of the public health organisation of the State."

They also point out how, as in this country, public health is developing steadily on individualistic lines as distinct from communistic. A claim is made that from a widespread campaign of personal education great results can be obtained, in support of which the health record of New York city is quoted. Whether this is a case of *post hoc ergo propter hoc* or not, the record is certainly astonishing, for we learn that the death-rate in the city became in 1910 as low as that of the surrounding rural districts, and has been below that in rural districts ever since, so that "the country no longer needs health protection against the city, but the city must be protected against the unhealthful influences of the rural districts. The public health problem of the future is to bring the work of the country up to the standard of that in the city."

Apart, however, from its wider interest to us at the present time, this book is an exceedingly useful volume. The authors seem to have adopted the sound principle of taking for granted that their readers know nothing. They therefore start from the beginning and in simple words tell their story. Nevertheless, they carry the story forward to include the most recent knowledge on each of the subjects treated. We strongly recommend those who are making the acquaintance of preventive medicine to obtain this book. It is as useful here as in the States, and the American way of emphasising and drawing attention to detail and fact cannot fail to be of use and to interest medical officers of health and sanitarians of all kinds.

ATLAS OF PLASTIC SURGERY.

A Stereoscopic Atlas of Plastic Surgery of the Face, Head, and Neck, by JOSEPH C. BECK and IZA FRANK, Chicago. London: Henry Kimpton. 1920. 35*s.* net (with stereoscope).

THIS Atlas includes a series of stereoscopic plates, designed to summarise the more common operations met with in plastic head surgery. In addition to the pictures, there are added brief case-reports.

JOURNALS.

Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., LL.D., F.R.S. Vol. LIII., No. 5. 1920. Cambridge University Press. Pp. 273–366. 7*s.* 6*d.*—On Physiological Radio-Activity, by H. Zwaardemaker. No representative of the heavy radio-active elements belonging to the three groups—radium, thorium, and actinium—is found in the animal organism, except, perhaps, a trace of emanation, but potassium to the amount of 40 gr.—one of the light radio-active elements—occurs as a permanent constituent of the body. It is stored for a great part in the muscle cells and red blood corpuscles, and rather more than 1 gr. in the blood as a free diffusible ion. The potassium ion is known to be indispensable to cardiac action, and it appears to be its radio-activity which is answerable for this action. Perfusing a frog's heart through a Kronecker cannula it was found that a radio-active element, whatsoever it may be, added, in a dosage of equivalent radio-activity, to a potassium-free Ringer's mixture, renders such a solution as effectual a circulatory fluid for the heart of a cold-blooded animal as the original fluid; strong hearts may continue beating for hours. No inactive radio element was found that could replace potassium in Ringer's mixture; α-emitting bodies taken up in potassium-free Ringer's solution proved excellent potassium substitutes. There is also an antagonism between light and heavy radio-active atoms not only for the frog's heart, but also for other systems—e.g., vascular endothelium. Perfusion of oxygenated Ringer's fluid through a newly killed water frog even for 24 hours is not followed by œdema, but if potassium is omitted from the perfused fluid a violent œdema is developed. This œdema can be prevented by replacing potassium by its substitutes (Rb, U, Th). It is known that the glomerulus-epithelium of the frog's kidney completely checks glucose in Ringer's fluid from appearing in the urine, and that glucose appears in the urine directly the potassium is left out. Instead of potassium uranium or radium may be taken in such dosage as is required to prevent œdema. Emanation—a chemically indifferent gas, Ramsay's niton—emits α-rays. This emanation, added to a potassium-free Ringer's solution, will restore the beat of a heart brought to a standstill through removal of the potassium. "It is certain that radio-activity is a mighty biological factor, capable of restoring a lost function. Such a factor may act either as a cause or as a condition." It is concluded that in a large number of systems—heart muscle, vascular and glomerular epithelium—the potassium atom may be replaced by other radio-active elements, the heavy ones as well as the light ones, provided the dosages are of equal radio-activity. When applied simultaneously the substances emitting α-rays and those emitting β-rays are reciprocally antagonistic. Potassium is (as bearer of the physiological radio-activity) for many cells a stimulus, which can restore and sustain function when it is brought in contact with the surface of cells, as a free, diffusible ion in the circulating fluid. A free radio-active substance can take the place of potassium when previously the potassium is omitted from the circulation.—Studies in the Regeneration of Denervated Mammalian Muscle: III. Effects of Massage and Electrical Treatment. By F. A. Hartman and S.-Sgt. W. E. Blatz. Neither massage nor galvanic stimulation appeared to benefit denervated muscle.—The Relation of the Animal Cell to Electrolytes. I. A Physiological Study of the Egg of the Trout, by J. Gray, M.A. The author describes the normal fertilisation of the egg of the trout—laid during the winter months from November until March—as well as the artificial "dry" method of fertilisation. The latter method yields 90 per cent. of fertilised eggs, the former perhaps only 8–10 per cent. In the "dry" method the sperm and eggs are mixed together and water is then added, so that each egg is surrounded by highly motile spermatozoa and fertilisation is assured, and it would appear that the actual entrance of the sperm nucleus into the egg takes place within half a minute after mixing the egg with sperm. The spermatozoa in the spermatic fluid are quite motionless, but if a very small drop of sperm is placed in the centre of a drop of water and examined under the microscope the spermatozoa near the junction of the two drops are seen to be intensely active. The spermatozoa are only motile when they come in contact with water, and the period of motility is extremely short—1½–2½ minutes. Hence the reason why the "dry" method is so much more effective than the "wet" or normal method, where the male sheds its sperm directly into the water over the position of the eggs, and few spermatozoa remain long enough motile to reach the eggs. Both fertilised and non-fertilised eggs contain a considerable amount of electrolytes. When an egg is injured or dies rapid exosmosis of electrolytes takes place. The egg never becomes permeable to intracellular colloids. After fertilisation electrolytes do not appear to diffuse out of normal eggs. The freezing point of the egg-contents is approximately that of the blood of fresh-water teleosts. The whole of the intracellular electrolytes can be removed by a dialysis of the cell contents, while the proteins within the cell—largely consisting of globulins, held in solution during life by neutral salts—are precipitated. This also occurs when the egg dies. The whole of the obvious changes produced in the dead egg are explicable by a study of the properties of the intracellular globulins—e.g., the change in size produced by acids and alkalies. The controlling factor of the high electrolytic content of the living cell appears to be located in the thin protoplasmic membrane lining the egg shell.—Other papers in this number are: The Time Relations of the Blood-Pressure Changes after Excision of the Adrenal Glands, with some Observations on Blood Volume Changes, by H. C. Bazett.—The Reaction and Carbon-Dioxide Carrying Power of the Blood: A Mathematical

Treatment, Part II., by T. R. Parsons.—The Influence of the State of the Blood on the Interworking of the Eyes, by Walter M. Coleman.

Veterinary Review. Edited by O. CHARNOCK BRADLEY, M.D., D.Sc., M.R.C.V.S. Vol. IV., No. 1. February, 1920. Issued quarterly. Price 6*s.*; annual subscription, 16*s.* 6*d.* Edinburgh: W. Green and Son, Ltd.—This number contains an opening article on the importance and value of an accurate veterinary bibliography. The writer, Mr. F. Bullock, secretary of the R.C.V.S., criticises bibliographies as frequently given by authors of literary and scientific articles and books. He points out many of the errors and omissions made in numerous examples taken from recent literature, and gives instructions as to how correct bibliographies should be compiled. Latitude should be given to the inspiration aroused by the perusal of other men's works, and personal attributes and phases of thought cannot be docketed as strict bibliographical references. The contents of the *Review* are divided into five main sections, comprising abstracts, reports, reviews, notes on books, and bibliography. All the sections are carefully written and compiled, and although only a young periodical, the *Review* is quite justifying its existence as a big mine of useful information. The divisions on reviews and notes on books are very valuable, as they keep readers abreast of current literature, and indicate that veterinary thought and research, taken as a whole, is alive and alert.

Le Scalpel. Bulletin de la Fédération Médicale Belge, 47, rue Dautzenberg, Brussels. 20 francs per annum. Vol. LXXIII. Nos. 3–6.—The problems of venereal disease are as much in the minds of our continental colleagues as in our own. In Belgium an article on the "péril vénérien," which appeared in *Le Scalpel* for Nov. 16th last has served as a touchstone to light the fires of controversy, and three out of the four numbers under review devote space to the subject.

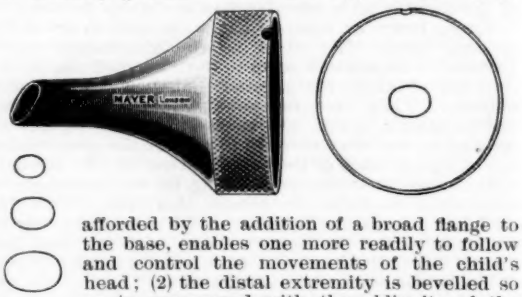
Dr. Bayet, of Brussels, contributes a paper, read in the first place before the Belgian Academy of Medicine, which deals critically and forcibly with the whole problem of venereal prophylaxis. After reviewing the various causes which have contributed to the great increase of venereal disease in Belgium—the German occupation, the laxity of morals associated with war, the demobilisation of their own army—Dr. Bayet turns in castigation upon the measures adopted to combat this plague. For "regulated prostitution" he has no good word to say. After 130 years this method is proved useless by the fact that the evil against which it was invoked was almost as rampant even before the war as on the day when State control was first enforced. The causes of immorality are deeply rooted in social conditions, and only the abolition of poverty which makes early marriage impossible will do away with illicit intercourse. But to-day the disease exists, and to fight it we must attack the germs in the bodies of those who convey it. This is the true basis of prophylaxis. All infected persons must be treated, and whether or not they are cured of the disease, at least we must be sure that they are rendered incapable of infecting others. To this end every encouragement to seek aid must be given to those who have taken the disease. Centres must be constituted where gratuitous treatment is afforded with due discretion. The State control of prostitutes makes this impossible, for so long as the policeman stands behind the doctor no woman will dare to apply at the clinics. Administrative prophylaxis has failed, and medical prophylaxis will only succeed if the whole profession unite in a broad-minded campaign to make it successful. The Ministry of the Interior (Department of Health and Hygiene) make the official position clear in *Le Scalpel* for Jan. 31st and Feb. 7th. They do not consider police supervision of prostitutes incompatible with medical treatment of the syphilitic population, since both are included in their plan of campaign. Apart from the first item, this resembles very closely the policy of our own Ministry of Health. Considerable stress is laid upon the value of education.

Other interesting articles include a research by Professor Laguesse (Lille) into the variability of the endocrine function of the pancreas, and a description by Dr. L. Ledoux (Brussels) of eight cases of severe stricture of the œsophagus resulting from burns. —Dr. Paul Denis claims to have succeeded in producing immunity as tested by the Widal reaction through the administration of a mixed vaccine (*B. typhosus*, *B. paratyphosus*, and *B. coli*) by the gastric route.—The abstracts appear to be selected from the French and Belgian medical press only, and book reviews are not numerous. Also, we must confess that the system of numbering the folios is a little bewildering.

New Inventions.

AN IMPROVED EAR SPECULUM.

THE difficulty of otoscopic examination in children has led me to devise an instrument (see figure) which, I believe, possesses some advantages over specula of the ordinary pattern. These are: (1) the good grip,



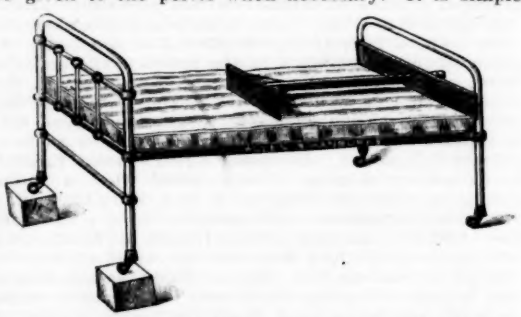
afforded by the addition of a broad flange to the base, enables one more readily to follow and control the movements of the child's head; (2) the distal extremity is bevelled so as to correspond with the obliquity of the tympanic membrane when in position—the notch in the margin of the speculum should point upwards and backwards; (3) the instrument does not taper to a point, the terminal 10 mm. forming a tube of uniform calibre; (4) this tube is oval on cross section, but, owing to the bevelling, the distal opening is circular; (5) the plating is polished outside but dull within, and the speculum is made in three sizes, having terminal apertures of 3 mm., 4½ mm., and 6 mm., the larger sizes being suitable for adult use.

The makers are Messrs. Mayer and Phelps.

Edinburgh. DOUGLAS GUTHRIE, M.D., F.R.C.S.

A PROP FOR RETAINING PATIENTS IN THE FOWLER POSITION.

THE prop shown in the illustration has been devised for retaining patients in the Fowler position, and is easily adjusted and slipped down so that attention may be given to the pelvis when necessary. It is simple



to clean and inexpensive. The head and shoulders well raised, the patient rests with the buttocks on a narrow shelf, on which is placed a small pillow, and a pillow is placed on each side of the vertical bar so that each leg may be supported. The peg is placed in a hole in the vertical bar at the foot of the bed, according to the length of the patient.

Messrs. Allen and Hanburys are the manufacturers.

Gloucester. C. FIRMIN CUTHBERT, F.R.C.S.

THE LANCET.

LONDON: SATURDAY, MARCH 20, 1920.

Robert Morant, Public Servant.

ROBERT MORANT, First Secretary of the Ministry of Health, servant of the public in many great capacities, was at the centre of some of the most important developments of our society, and by his death the nation, and not only the medical profession, has lost an incomparable adviser. The widespread sorrow which has been caused by his sudden end last week has received a large measure of acknowledgment in the detailed records of his life which have appeared on all sides, so that we need not recapitulate in this place how the Wykehamist and Oxonian went rapidly from theology to schoolmastering, and then by dramatic transition to a confidential post at Siam, to welfare work in the East of London, and so to the Board of Education. Intensive study in the slums made him familiar with the social and educational defaults under which a large majority of the population of the country were dwelling, and his splendid work at the Education Office, culminating in his appointment as Permanent Secretary of the Board of Education, was made possible by his ripe experience, his sympathy with the unmerited drawbacks of those who get no chance, and above all by his large views of justice.

All this is interesting, because it is explanatory of the position and actions of the man who bore the brunt of many controversies over the National Insurance Act, and, it may be added, who never concealed his dislike of much that became the necessary procedure of that measure, even while the objectives of the vast piece of legislation were the expression of his own ideals. It was characteristic of MORANT that, when he realised that the National Insurance Act was going to take the shape that it did, he suppressed all spirit of criticism in himself in order to extract from the new legislation the greatest good for the people. The working of the National Insurance Act, so far as its principal intention was the provision of medical assistance upon the insurance plan for a large section of the population, was hampered from the start by the want of preliminary preparation. The ground had never been properly surveyed before occupation, and muddles and altercations that might have been avoided marred the start of a measure which, upon its introduction, had received a unanimous ovation. To MORANT there fell a large share of the constructive work which had to be undertaken in these unpromising circumstances, and his efforts were soon realised by the medical profession as being in accordance with a courageous desire to do right. But the working of the Act had hardly got into swing before the war broke out, with the result that a large proportion of the insured, and, relatively speaking, an even larger proportion of the medical men in charge of the health of the insured, were removed to new spheres of activity; of the doctors many of those in panel practice joined the colours, and those who remained behind had to discharge their duties in circumstances not comparable with any that were contemplated by the Act. MORANT helped to enable the medical profession to meet the extreme claim upon them, and those who attended the sessions of the Central Medical War Committee will remember how hard he fought for the interests of medical men of all classes, as he regarded those interests, and how resolute he was that the maintenance of the health of the country and of the workers at home should count as second only in importance to the necessity of supplying the fighting men with adequate medical assistance.

During all the time between the passage of the National Insurance Act and the cessation of hostilities in the war MORANT steadily grew in the esteem of the medical profession, who realised that in him they had a genuine friend, candid in respect of their weaknesses, but more clear-eyed than many of their own leaders in respect of their great qualities and potentialities; and when the Ministry of Health arrived he was unanimously marked out for his post. This was, moreover, as it should have been, for while the idea of such a Ministry had been present to the minds of medical reformers for at least three generations, it was MORANT'S idealism, broad range of experience, and powers of intimate concentration which counted incalculably in the transformation of the idea into a working organisation. He has died on a winning field, with the pathos that surrounds such a tragedy.

The Lessons of Statistical Methods.

A LETTER from Dr. H. E. LITTLEDALE appealed in THE LANCET of Feb. 28th for the more extended use of statistics in their application to medical treatment; and in the same issue, dealing with the petition of the Royal Statistical Society for a State committee of inquiry into the collection and presentation of public statistics, we commented upon the use of figures in medicine. It is enticing to think that by an appeal to statistics we can settle once and for ever the best, the most successful, process of dealing with a pathological condition, but the dangers of accepting figures in their wrong significance are greater than neglecting their lessons entirely. In political matters it was long ago recognised that statistics could be made to support the most diverse ideas, and those who are watching the alcohol controversy will see that figures can be advanced purporting to prove on the one hand that alcohol is the main cause of

poverty, and on the other that in countries where alcohol is used there is less poverty than in those which, in the picturesque language of America, are "dry." Statistics may be of immense value, but they must be used with the greatest caution, for their fallacies are apt to be concealed even from experts. Sound statistics, sifted and garnered in a right way, will form a firm foundation for trustworthy conclusions, and by statistics alone can a true idea of the value of some forms of treatment be based. But recognition of the limitations is necessary. An instance may be found in the serum treatment of tetanus. The prognosis of a case of tetanus is always doubtful; sometimes the most severe cases seem to recover when it is impossible to say that the treatment has saved them. Still more difficult is it to say, by the observation of isolated cases, whether the serum can prevent tetanus for many wounds that might be expected to be followed by tetanus never give rise to it, and even very slight wounds may end in an attack. It was only by the consideration of a long series of cases, in which every case of wound was treated with doses of the serum, that we could be certain that the serum had a definite and a very great power to prevent the development of the disease. Apart from the individualities of the patient and the uncertainties of diagnosis, we have to consider, when estimating the comparative value of any therapeutical procedure, all the environmental conditions, the stage of the disease, and perhaps the strain of a particular germ. These difficulties can only be met by observations so vast in number as to indicate the magnitude of the ideal.

Dr. LITTLEDALE'S suggestive letter may be referred to as showing alike how the need for statistical methods is felt, and how the scope of such methods is not fully recognised. By statistical methods we mean methods specially adapted to the elucidation of quantitative (numerical) data affected by a multiplicity of causes. Dr. LITTLEDALE asks for the results of 5000 operations of breast cancer as to duration of life, freedom from pain, and so forth; he also asks for the results in 5000 cases of breast cancer treated by any one or other method. It is not feasible to obtain the required data in any shape that can be called statistical. Pain, for instance, cannot be subjected to quantitative measurement, and it is extraordinarily difficult to determine its real seat of origin. If we consider the question of duration of life—a more obvious one for the application of statistical methods—we still find that we have no really simple task before us. It is said that the expectation of life in those on whom no operation has been performed is about 22 months, while in those who undergo a radical removal of the breast the expectation of life is 38 months. But this is not an answer to Dr. LITTLEDALE'S question. Suppose that careful notes have been taken of 5000 operation cases by two or three good surgeons whose percentage of so-called successes in early breast cases is approximately the same; and that 4000 sets of notes can be obtained of cases which have been only subjected to one special non-operative treatment by a few practitioners whose results are approximately equal—we depart purposely from Dr. LITTLEDALE'S figure to show that there is no point in identical numbers—it might be thought that the two sets of notes would give the requisite data. Far from it. It is known that the prognosis of duct cancer after operation is good, and that of encephaloid is extremely bad, while cases of very chronic scirrhus may live for perhaps 20 years or so. It will be necessary, then, to compare only cases of carcinoma of the same type. Further, it is absolutely necessary that every case should be submitted to a pathologist for histological examination, in order to be certain that the case was really one of the type under consideration. Otherwise what possible evidence can we obtain, in a case that has not been operated upon and which has been reported as cured by some non-operative measure, that it was a case of carcinoma at all? Again, the stage of the disease in the two classes when they come under treatment must be comparable. More or less sound conclusions could be drawn from data that dealt with cases that came under treatment within the first five months, say, after the onset of the disease, in every one of which a small portion of the growth had been removed and certified by an adequate pathologist to belong to the type under consideration; and, further, the number of cases in either class that were alive at the end of five years would be good material for conclusions. It is true that some deaths might have occurred from accidents or intercurrent disorders, but we may assume that the proportional frequency of such deaths would probably be about equal in each class, those that have undergone operation and those that have not. Even with the most careful precautions against error we must always remember that we are dealing with different patients whose vital resistance is different. But if the data we have indicated could be obtained the method of dealing with them would be as follows. Say that in Class A, those which have undergone operation, there are 5000 cases, which we may denote by (A), and that 500 of these are alive at the end of five years, we can represent this 500 by (AL). Then $\frac{(AL)}{(A)} = \frac{500}{5000} = 10$ per cent. And say that in Class B, those which have undergone no operation, there were 4000 cases, denoted by (B), of which (BL), say 80, cases were alive at the end of five years. Then $\frac{(BL)}{(B)} = \frac{80}{4000} = 2$ per cent. Such a result would be strong evidence in favour of the treatment to which Class A was subjected. But conclusions can only be drawn by comparing the ratio $\frac{(AL)}{(A)} \cdot \frac{(BL)}{(B)}$, and even then the conclusions will be misleading if there has been any selection of cases; if, for instance, the less threatening cases are submitted to non-operative treatment.

Enough has been said to show how difficult it is to obtain the requisite data to which to apply statistical methods in this particular instance selected for consideration. It is not the fault of the methods, but of the observations, which can be so seldom made in the necessary form. Dissimilar cases are put into the same class (for instance, duct cancer with encephaloid) or dissimilar classes of cases are compared with each other rendering the deduction valueless. The general lesson to be enforced is this. Statistical research, like any other branch of scientific investigation, involves difficulties of two orders—the material and the methodological. Most of us appreciate the latter, and feel that experience in the use of mathematical notation is required. But it is equally necessary that mathematical analysis should be informed with exact familiarity with the material peculiarities of the data. Both kinds of knowledge are necessary to reach truth by the statistical path, and even to avoid error. For these reasons the presence of eminent statisticians is welcome upon the Interdepartmental Committee appointed to settle the forms which the records of medical practitioners under the Insurance Act shall take.

Adequate Isolation Hospital Accommodation.

SOME little time ago we were asked by a correspondent to state briefly the factors which should be considered in arriving at a conclusion as to whether or not the isolation hospital accommodation of a district is adequate for the needs of the population it is intended to serve. The answer to this question depends upon various considerations, among the most important of which are: the character of the district, whether urban or rural; the rate of increase of population; the housing and habits of the people; and the amount of intercourse with other places from which infectious disease may be introduced. In most districts hospital accommodation is provided for cases of scarlet fever, diphtheria, enteric fever, and cerebro-spinal fever. For these four diseases, 1 bed for every 1000 inhabitants may be accepted as a rough estimate, though it cannot be regarded as a definite standard. Such a provision is not likely to be found excessive, and will not suffice for the accommodation of all cases during epidemic periods. The adequacy of hospital accommodation will, of course, depend not merely upon the aggregate number of beds, but also upon the manner in which they are arranged in wards. As a general rule it is necessary to have separate pavilions or ward-blocks for each disease admitted to hospital, but an isolation block containing a number of small wards separately entered from the open air is very useful. Accommodation of this nature can be employed for the simultaneous isolation of cases of different diseases; for keeping doubtful cases under observation; for the segregation of complicated or delirious cases; or as private wards for paying patients.

If it is intended to isolate cases of measles and whooping-cough many more beds than 1 per 1000 of the population will be required, but these diseases are seldom removed to hospital on a large scale as the utility of such a measure is still doubtful. Pulmonary tuberculosis is now generally treated in sanatoriums or hospitals belonging to sanitary authorities. The schemes in force for the prevention of the disease are not uniform in character. In some districts only early cases are admitted to the sanatorium, sometimes for short periods as an educational measure or for more prolonged open-air treatment. In other districts late as well as early cases are taken into hospital or sanatorium. No general standard as to the number of beds required is therefore of much value; the needs of each district can only be estimated by consideration of all the various factors concerned.

Every sanitary authority should make provision for the isolation of small-pox. They may do this by themselves erecting a small-pox hospital or by arranging with some other sanitary authority for the use of a certain number of beds when required. The cost incurred may be regarded as the price which the public have to pay for what is known as conscientious objection to vaccination. The modern possibilities of communication by means of motor ambulances render it practicable for a single small-pox hospital to serve the needs of a large area. It is important that the following conditions, which were laid down by the Local Government Board in connexion with small-pox hospitals, should be complied with. The site must not have within a quarter of a mile of it either a hospital, whether for infectious diseases or not, or a workhouse, asylum, or any similar establishment, or a population of as many as 200 persons. It must not have within half a mile of it a population of as many as 600 persons, whether in one or more institutions, or in dwelling-houses. Even where these conditions are fulfilled, a hospital must not be used at one and the same time for the reception of cases of small-pox and of any other class of disease. It is impossible to estimate the number of beds that may be required for the isolation of small-pox during epidemic periods. The site should in all cases be sufficiently large to admit of rapid extension of the hospital by the erection of temporary buildings, and the administrative portion should be upon such a scale as to suffice in the event of such extension of the ward accommodation becoming necessary.

SCOTTISH BOARD OF HEALTH: CONSULTATIVE COUNCILS.—The consultative councils set up under the Scottish Board of Health Act have appointed the following Chairmen and Vice-Chairmen:—Medical and Allied Services—Chairman: Sir Donald MacAlister, K.C.B., M.D.; Vice-Chairman: Norman Walker, M.D. National Health Insurance—Chairman: W. Thomson; Vice-Chairman: Thomas J. Addly. Local Health Administration and General Health Questions—Chairman: Sir Thomas Munro, K.B.E. Highlands and Islands—Chairman: Her Grace the Duchess of Atholl, D.B.E.

Annotations.

"Ne quid nimis."

NEW STAFF OF OUTDOOR MEDICAL OFFICERS OF THE MINISTRY OF HEALTH.

IN connexion with the appointments for medical officers which the Ministry of Health announce in our advertising columns this week the Ministry supply the following particulars which may be of interest. The new staff will include both whole-time and part-time medical officers. Each whole-time officer will be stationed in the area in which he works. Particulars as to the part-time appointments will be announced later. The duties of the whole-time officers will be partly clinical, partly administrative; of the part-time officers clinical only. The clinical duties of the medical officers will consist in examining insured persons referred to them by Approved Societies or doctors, in advising the societies and doctors on questions of incapacity for work, and in advising doctors on questions of diagnosis and treatment. The clinical duties will thus combine those of referee and consultant. For cases of special medical difficulty specialist advice as to diagnosis or treatment will be made available for the assistance of the medical officers. The administrative duties will include examining health insurance medical certificates, records, reports and prescriptions, and making inquiries of insurance practitioners respecting any points arising on these or arising out of the examination of insured persons. The medical officers will also make such other inquiries and take such action in connexion either with the work of the Insurance Medical Service or with other branches of the work of the Ministry as the Ministry may from time to time require.

The Minister proposes to appoint in the first instance 18 whole-time officers for England and 3 for Wales. In addition there will be a small number of supervisory posts. It is contemplated that this number of whole-time officers may be increased (with a corresponding reduction in the employment of part-time officers) as soon as sufficient experience has been gained of the working of the arrangements. Although particulars of the part-time appointments are not yet available, it may be of interest to state that the work of part-time officers will be arranged, so far as the nature of the case permits, in definite half-day sessions at fixed centres; in the more remote parts of the country it will be necessary to employ doctors specially for single cases. Sessions will be held at the various centres at such periods (weekly, fortnightly, or monthly) as may be found necessary to deal with the flow of cases. So far as it can be avoided, a practitioner working part-time will not be called upon to examine cases within the district in which he ordinarily practises. The Minister is appointing a selection committee (of which the personnel will be announced shortly) to consider all applications for the appointments which are now advertised and to make recommendations to him.

SUGAR-BEET GROWING AT HOME.

LAST week a prospectus was issued to the public inviting subscriptions to a large sugar-beet enterprise in this country. With the financial prospects of this concern we have nothing to do, but a leaflet was enclosed in the prospectus setting out some facts which deserve very careful attention as bearing on the future food-supplies of this country. The promoters state that this leaflet forms part of the prospectus, but add that it was issued by the British Sugar-Beet Growers' Society, an association, we may add, supported by eminent agriculturists, economists, and scientific men. This society regards the development of sugar-beet growing as a regenerating influence in agriculture. It is claimed that increased production will result from the introduction of sugar-beet as a rotation crop. One well-known authority states that we can grow beet in England just as well as it is grown on the continent; 12 to 18 tons can be produced per acre, yielding 15 to 17 per cent. of sugar. Wherever the sugar-beet industry has been pursued we are told there has been a better agriculture, there has been more stock, there has been no supplanting or diminution of grain crops, and, finally, there has been increased employment and a greater state of prosperity for the agricultural community. An interesting fact about the beet plant is that it does not in any way exhaust the soil, the sugar being formed in the leaves from the carbon dioxide in the air and the moisture in the ground and transferred to the roots. This sounds a simple synthesis, but one which the chemist so far has not been able to effect. Sugar-beet, whether it is used for its sugar or not, is stated to provide the stock and dairy-farm with a valuable food, and after the extraction of sugar the remaining pulp, representing 50 per cent. of the original root, is highly nutritive to cattle. Experiments have shown that beet-pulp when fed to steers resulted in an approximate gain of 70 pounds per month in weight, and when fed to dairy cattle greatly increased the yield of milk. Finally, we are told that the establishment of the sugar-beet industry in Great Britain will do more to revive the prosperity of our shires and villages than any other possible agency. These authoritative statements are surely of the greatest national importance, and should receive serious and widespread consideration, with the view of getting to work without the slightest delay.

MENINGEAL SYNDROME IN SUNSTROKE.

IT may not be generally known that in severe cases of sunstroke the cerebro-spinal fluid shows marked changes. The fact is of practical importance, for ignorance of it might lead to the diagnosis of meningitis. As long ago as 1903, a French clinician, Dopter, found that, while in mild cases of sunstroke the cerebro-spinal fluid is clear, of normal tension, and does not contain cells, in severe cases it is cloudy, of increased tension, slightly albuminous, and contains cells of variable number. At first there is polynucleosis, then lymphocytosis is gradually established. In the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* of Jan. 11th, MM. J. Desqueyroux and Lartigaut have reported the following case:—

A chauffeur, aged 18 years, was admitted into hospital on August 20th, 1919, for obstinate headache. A fortnight before he made a long journey under a hot sun. His face, neck, and hands became erythematous for a few days and then desquamated. On August 19th, he was again exposed to the sun under the same conditions and suffered from severe headache which obliged him to lie down. On admission he answered questions well and had no mental symptoms. The tongue was foul, the pulse was good but a little slow (60), and the temperature 103° F. He complained of persistent headache. There was stiffness of the neck in the movements

of flexion and extension, but movements of rotation were normal. Kernig's sign was marked, and the meningeal streak was persistent. The reflexes were normal, but the pupils responded sluggishly to light. Lumbar puncture was immediately performed and yielded clear fluid, not under increased tension. On centrifugalisation the deposit was slight, but microscopic examination showed undeformed red corpuscles and numerous cells, about 40 to the field. The leucocytes did not appear altered; their outlines were clear, their nuclei intact, and they preserved their tinctorial affinities. The formula was as follows: Polynuclears, 49·5 per cent.; lymphocytes, 3 per cent.; and large mononuclears, 47·5 per cent. The amount of albumin was greatly increased. Neither direct examination nor cultures showed any microbes, and the Wassermann reaction was negative. Next day the temperature fell to 99·5°, and recovery ensued.

The meningeal symptoms in this case are noteworthy, being more marked than is usual in sunstroke. The conditions found in the cerebro-spinal fluid did not altogether correspond to those described by Dopter, though, as stated by him, the puncture immediately relieved the symptoms. He did not find large mononuclear cells in any of his cases. The intact condition of the leucocytes in the cerebro-spinal fluid is an important diagnostic point. They differ entirely from those found in the ordinary forms of meningitis. The conception of "aseptic meningitis" with intact leucocytes has previously been introduced by Widal. He noted these in the "aseptic puriform meningitis" which occurs in syphilis of the central nervous system. MM. Desqueyroux and Lartigaut attribute the meningeal irritation, a veritable aseptic meningitis, to a phlogogenic influence of poisons accumulated in the organism as a result of the sunstroke. The accumulation is particularly marked in the cerebro-spinal fluid. This fact, according to Dopter, explains the curative action of lumbar puncture, which both abolishes the high tension and removes a certain quantity of the poisons.

AMERICAN ANTI-TYPHUS WORK IN POLAND.

IN fighting typhus in Poland great activity was shown last autumn by the Polish Typhus Relief Expedition of the United States Army. This expedition was commanded by Colonel H. L. Gilchrist of the Medical Corp, U.S.A., and news about it has come to us in his reports.[1] He had some 30 officers and 420 men with him, and 32 trains brought over from Coblenz to Warsaw the stores bought by Poland from the American Expeditionary Force, and those contributed by the American Red Cross. Amongst the stores are mentioned 1000 tons of soap and 1,000,000 suits of underclothes. The American officers were posted to districts and worked through the Polish medical health officers. They established field columns which travelled about the country with laundry and disinfecting plants; where they had operated there were no more cases of typhus. The work done by the Americans was largely educative; they were training the Poles to do the work for themselves, that they, the Americans, might get home. They had also to commend their work to the people. There is evidence that they succeeded. Thus at Wlodawa it is observed that "much opposition was at first encountered, and the assistance of the military was required to get the people to the bathing and delousing plant; conditions have so changed it now requires the assistance of the military to keep them away. The people realise the necessity of the work and are coöperating in every way." 28,000 people are, on Nov. 15th, reported to have been washed and deloused. It is to be regretted that operations were begun so late. In the spring 40 field columns will be in action. Each sanitary train comprised 20 specialists, to superintend the bathing and delousing of 800 people daily. Petrol ran short, which delayed work, a motor repair park and chauffeur's school was established, a dentist arrived, and a quarantine cordon was established on the Eastern border. With all this food distribution was never forgotten, it was of so great help in fighting typhus. A most creditable record of industry, good organisation, and philanthropy.

[1] Military Surgeon, February, 1920.

THE OPERATIVE TREATMENT OF CANCER OF THE LARYNX.

THE history of external operations for the removal of malignant disease of the larynx dates from 1870, when Czerny showed by experiments on dogs the possibility of total laryngectomy, and Foulis collected 11 years later 25 cases of this operation, none of which had survived for 12 months. In consequence of these bad results an attempt was made to treat the disease by laryngo-fissure, but with no better success, for in 1887 P. Bruns collected 19 cases with 16 local recurrences and 2 immediate deaths. The illness and death of the German Emperor Frederick in 1888 stimulated interest in the subject. The importance of Krishaber's division of laryngeal malignant growths into intrinsic and extrinsic became generally recognised, and the work of Butlin and Semon established the operation of laryngo-fissure or thyrotomy, which is now acknowledged in Great Britain as the operation of choice for intrinsic cancer which has neither spread extensively to the upper aperture nor penetrated beyond the cartilaginous framework of the larynx. Semon, in 1907, reported 24 cases with 1 death and 3 recurrences, while Sir StClair Thomson reported in 1919 38 cases in his own practice without a death and with 9 recurrences. It will be seen that these results compare very favourably with operations for malignant disease in any part of the body. The important point is early diagnosis, which can usually be made easily enough if only patients be submitted to expert examination on the appearance of the one early symptom, which is hoarseness. Unfortunately, and especially in hospital practice, a large proportion of cases are not seen in time for treatment by laryngo-fissure, and the only alternatives are palliative treatment, which may include tracheotomy and gastrostomy, and laryngectomy; this operation is also the only one available for cancers which begin extrinsically, if we except a few localised growths of the arytenoid and epiglottis, which may be removed by partial operations. Hemi-laryngectomy is seldom performed now in this country, principally because it does not permit the air-passages to be shut off from the wound area, a modification which has considerably lowered the mortality of total laryngectomy. It still remains true that the majority of cancers of the larynx reach the surgeon too late for removal by any operation. Total laryngectomy is a very severe operation, and cases should be carefully selected with regard both to the general health of the patient and the local condition. The growth is generally more extensive than appears on laryngoscopic examination. Any considerable glandular involvement is a contra-indication; so also is the

invasion of a large part of the pharyngeal wall, though there have been a few successful cases of removal of the pharynx after preliminary gastrostomy. However, the results of the operation are steadily improving, and its position is now well established. In reviewing statistics from abroad it must be remembered that laryngectomy is often performed for cases which would be treated by laryngofissure in this country. Thus, Crile, in 1912, reported 24 cases with 2 deaths from operation, but does not use laryngo-fissure; Botez, of Barcelona, in 1914, collected about 200 cases and reported 17 per cent. of deaths, 52 per cent. of recurrences, and 20 per cent. of cures. Chevalier Jackson, who performs laryngofissure for intralaryngeal cancer, reported in 1906 that, of 29 cases of extrinsic cancer, he did 8 laryngectomies with no deaths due to the operation, 3 recurrences, and 3 cures at the end of 12 months (1 case too recent to report and 1 lost to view); and in England F. G. Harvey reported 6 cases in 1901, of which 3 were successes. It is being increasingly recognised, as the result of experience, that after this operation patients are *not* reduced to a miserable existence, to which death would be preferable. On the contrary, they can swallow without discomfort or difficulty, and most of them learn to utilise the air of the mouth and pharynx to produce a whisper easily understood, or can do so with the aid of a tube leading from the tracheal opening to the mouth. Sir Charters Symonds, in a paper which we publish in the present issue of THE LANCET, gives a description of four patients who have survived in comfort and happiness and done useful work for 8, 12, 15½, and 22 years respectively; it is to be hoped that this article will encourage doctors to submit suitable cases to operation before it is too late. Sir Charters Symonds does not give any account of the remainder of his cases of laryngectomy, and the publication of these would prove interesting, as also would a description of the details of his operative method, for the technique of this operation has by no means as yet been finally determined.

RECENT ADVANCES IN VETERINARY SCIENCE.

THE work of the Division of Veterinary Science, described in the annual report of the College of Agriculture and the Agricultural Experiment Station of the University of California, has been interesting and instructive. The diagnosis of tuberculosis by the complement-fixation test, however successful in man, has proved unsatisfactory in animals; 9·3 per cent. of positive results were obtained in non-tuberculous cattle, and the test proved of no value in the diagnosis of tuberculosis in 20 hogs. It is stated to have been shown by experiments in the field that tubercle bacilli from diseased cattle became harmless in 17 days in dry weather, whereas they retain their virulence for a long time (94 to 171 days) when exposed to rain and moisture. In water-holes tuberculous material was found to remain infectious still longer, in one case for 687 days and in another for 548 days. These results have an important bearing on the disinfection of the surroundings of a tuberculous cow, for any medium which may contain infected material should obviously be freed from sensible moisture. Hypochlorite solution is largely used in disinfecting the stalls of tuberculous cattle, though wholly favourable conditions for its effective action seldom exist; nevertheless, the mechanical removal of discharges and the use of disinfectants on general principles is a sane and safe procedure. Other experimental results recorded in the report include the beneficial effect of sour-milk treatment in coccidiosis of chicks and entero-hepatitis of turkeys, the detection of avian tuberculosis by the intra-dermal test, and the expulsion of intestinal round worms from fowls by the use of 1 lb. of tobacco-dust to 50 lb. of dry mash, or a dose of 1 lb. of tobacco-dust per 100 birds. Investigation of preparturient paralysis of ewes, a troublesome disease from which many losses occur, did not reveal its cause; but as a preventive measure it is advised that the amount of dry food given to ewes during the last months of pregnancy be limited, and that they be made to rustle for their food in order to gain plenty of exercise. An interesting affection of rams denoted by enlargement of one or both testicles, and known locally as "big ball," was found post mortem to involve the whole of the genito-urinary tract and to be due to the *Bacillus pyogenes*, which produced pus and necrosis of soft tissues. A contingent of these rams, not visibly affected, or apparently recovered, only got 33⅓ per cent. of the ewes in lamb. Infection appeared to occur through the urethra. A farm is kept where students may see demonstrations of the methods of clean milk production. It is here that science ought to be able to produce excellent results without greatly upsetting or disorganising present operations. Cleanliness of cow-houses, cows, milkers, properly constructed milk-cans, and care in the distribution and storage of milk are matters of intelligence and industry, and cow-keepers, farmers, and dairymen can secure much more favourable conditions by the exercise of watchfulness and zeal.

A HOSPITAL FOR THE METROPOLITAN POLICE FORCE.

IN a report recently made to the Home Secretary by Sir C. F. Nevil Macready, Commissioner of the Metropolitan Police, it is stated that a committee, under the chairmanship of Sir Hamar Greenwood, has recently had under consideration the whole question of the medical treatment and hospital accommodation for the Force, which seemed capable of some improvement. It is hoped that in the near future the Force may be in possession of a hospital to meet the needs of all ranks, which will go far to put an end to the present system, under which officers and men requiring treatment are often kept for long periods before being able to obtain admission to one or other of the great hospitals of the metropolis.

THE BACTERIOLOGY OF TUBERCULOSIS OF THE SKIN.

IN the last number (Vol. XXIII., No. 2) of the *Journal of Pathology and Bacteriology* Dr. A. Stanley Griffith describes the results he has obtained in the examination of 52 strains of tubercle isolated from cases of subcutaneous tuberculous abscess (scrofulodermia) occurring in Middlesbrough. In 32 instances the organism was of the human type, in 20 of the bovine type, and in testing the virulence of these cultures he made the interesting discovery that 13 per cent. of the former and 20 per cent. of the latter were of definitely low virulence. Hitherto these "attenuated" strains of tubercle bacilli have

hardly ever been found in man except in lupus, and it is worthy of note that seven of the eight cases of scrofulodermia from which they were obtained were suffering or subsequently suffered from some form of lupus. In the magnificent series of 1068 fully tested cultures of tubercle bacilli from human disease which Dr. Griffith and his collaborators have examined during the last ten years, these "attenuated" strains have occurred 46 times—in 36 out of 45 cases of lupus, in 8 of 52 cases of scrofulodermia, once in a cervical gland, and once in an intermuscular abscess; 24 have proved human and 22 bovine in type. We could wish that all bacteriological facts rested on such ample and strictly comparable data.

THE STORY OF SALVARSAN.

IT is possible to take the story of the war emergency in organic arsenical compounds one stage further back than was done in our leading article last week. In September, 1914, Dr. W. H. Willcox was consulted by the Board of Trade in regard to the serious situation which had arisen, no salvarsan being then available in England. Dr. Willcox, in collaboration with Professor Sir Herbert Jackson, F.R.S., and Professor A. W. Crossley, F.R.S., carried out a laborious investigation on samples of kharsivan submitted by Messrs. Burroughs, Wellcome and Co., as a result of which it was established that this product, toxicologically and clinically, was practically equal to salvarsan. Their report was issued on Oct. 24th, 1914, and following upon it kharsivan was placed on the market. Afterwards the routine testing was handed over to the Medical Research Committee.

THE Minister of Health has added to the Committee on Medical Records Mr. G. S. W. Epps, F.I.A., to represent the department of the Government Actuary.

THE house and library of the Royal Society of Medicine will be closed from Thursday, April 1st, to Tuesday, April 6th, both days inclusive.

COMPLIMENTARY DINNER TO DISTINGUISHED CHESTERFIELD MEDICAL MEN.

A complimentary dinner was held under the chairmanship of Dr. R. A. M. L. McCrea on March 11th by the medical profession of Chesterfield and district in honour of Sir Josiah Court, recently knighted, and Surgeon-Major A. W. Shea, D.S.O. Sir Josiah Court, in reply to the toast of his health, told a story typical of student wit. At Guy's in his student days Partridge, the famous surgeon, had a horse with a very long neck; so the students christened it "Longus colli"! Later he got another horse, and this one happened to have a very broad back. It was promptly dubbed "Latissimus dorsi"! In course of time this horse also disappeared, and he got another which was thoroughly well built and presented nothing upon which to "hang a label." However, the student ingenuity was not to be beaten, and one day a super-wit conceived the delightful name of "Os innominatum," by which title the horse was ever after known. In responding to the toast of "The Visitors," Professor Arthur Hall congratulated Surgeon-Major Shea on his recent honour, and pointed out that he was the senior past student of the Sheffield School of Medicine to gain a distinction on active service. A review of the distinctions gained during the war by members of the school showed a very fine record: one V.C., one C.M.G., two D.S.O.'s, one M.C. with bar, five M.C.'s, seven mentioned in despatches. The foreign decorations included the Croix de Guerre (won by a woman) and the Order of St. Sava of Serbia. The actual percentage of honours amongst the 254 old students who joined the school between 1888 and 1913, and are still living and in practice, came out, said Professor Hall, to little short of 8 per cent.

THE EGYPTIAN LUNACY DIVISION REPORT.[1]

THE review of the Report of the Lunacy Division from Egypt is very full and informing, agreeing in these respects with the last report.[2] There is great overcrowding in the institution, and, as a consequence, the premature discharge of patients results in relapse or recurrence of mental disorder, and, what is worse, we have criminal attacks of partially recovered patients, who have no longer to be treated as ordinary lunatics but as criminal lunatics. These are the salient features of the document.

The Need for More Asylums.

Dr. J. Warnock, the head of the lunacy work, sketches out some big plans as to other asylums which should be started as soon as possible. The idea that the lunatics in Egypt were very imperfectly provided for was perceived by Lord Cromer, who also recognised that there was not only a want of provision for patients, but (which, he said, was a much more important thing) a want of financial means to carry out any large measure of reform. Dr. Warnock considers that, besides another large asylum somewhere in the neighbourhood of Alexandria, there should at least be an asylum for male criminal lunatics; also an asylum for chronic, evidently incurable, but quiet lunatics, and that proper separate provision for European lunatics is needed. He also thinks that reception wards should be provided, probably in association with general hospitals, in various provincial towns. The central reception-houses should certainly be in Cairo and Alexandria, but provincial asylums also are necessary. When it is reckoned that not one-fourth of the insane in Egypt can possibly be cared for in the present asylums, it will be seen that Dr. Warnock's suggestions are quite reasonable. But, as in Lord Cromer's time, the financial difficulties will probably hinder the development of this scheme.

A short special note is made of the military asylum which was established to meet insanity occurring in the troops, as well as of the asylum at Abbasiya, which receives patients of both sexes, chiefly from Cairo and the neighbourhood, including criminal lunatics. At Khanka a certain number of the more quiet patients—all males, by the way—are sent from Cairo. At this asylum the majority of the non-city dwellers are received, the result being that a different class of patient and a different class of disease is met with in the two asylums.

There was during the last year a great increase in the number of female patients. Provision of accommodation for several classes of paying patients has steadily progressed. As has been noted before in these columns, the lunacy reports, both by Dr. Warnock and Dr. H. W. Dudgeon, are models of clearness and accuracy. All details as to expenditure are given, and the scientific work is not overlooked, though during recent years it has been greatly hindered by war conditions. The death-rate is high; as Dr. Warnock points out, the rate is 21 per cent. in Egyptian asylums.

Chief Causes of Insanity in Egypt: the Prevalence of Pellagra.

Pellagra again is represented as the chief cause of the insanity met with in Egypt, and in respect of the high mortality a special study has been made as to the relationship of pellagra to diet. This is referred to later. As to the overcrowding, in April, 1919, there were 2075 lunatics resident, whereas there was only accommodation for 1581. This leads to a high mortality-rate, a high disease-rate, a high accident-rate, and a low recovery-rate. The British staff, both medical and lay, is small, and was reduced by men being called up for war service.

In the special hospital for soldiers, during the year 125 men were admitted. Of these only five died. In

[1] Report of the Ministry of the Interior, Egypt, Lunacy Division, 1918, at Abbasiya and Government Hospital for the Insane at Khanka.

[2] See THE LANCET, 1919, i., 117.

the 125, dementia præcox is represesented by 27, delusional insanity by 25, melancholia 19, mania only 7. Most of the other forms of insanity were represented by quite small numbers. Nothing very noteworthy is said as to the causation of these cases, but heredity is given as being evidenced in 39 of the patients.

Of the patients admitted as criminals, pellagra produced 8. Theft and attempted murder were the chief crimes. There were under observation during the year 404 criminal men, 35 criminal women. 380 patients were released before recovery to make room for more acute cases. There is always a rise in the admission-rate in both hospitals for the insane when warm weather begins in April, and the admission-rate falls with the rising of the Nile and the onset of cooler weather.

As to the forms of insanity, pellagra ranks first. alcohol and epilepsy are also potent influences. General paralysis of the insane produces a good many patients among town-dwellers, so there is a much larger proportion of such cases at Cairo than at Khanka. Both men and women are represented, more women in proportion to men than are found in English asylums.

An interesting table shows the various areas in Egypt which produce the largest number of patients suffering from pellagra. Pellagra accounts for 23 per cent. of the female admissions and for 35 per cent. of the deaths among the women. Hashish produces some cases, these coming chiefly from Cairo.

Treatment: the Absence of Restraint.

A report is given of the treatment and the number of patients who are artificially fed. Again the astonishing fact is brought out that during the year no restraint whatever was used. There were very few accidents, and these only of a very trivial kind. The Wassermann test was applied at the Government pathological laboratories, and the results are certainly remarkable if they are to be taken as definite evidences of syphilis. Of the cases of general paralysis of the insane one is surprised to find that only 62 per cent. of the males gave a positive reaction, whereas 83 per cent. of the females gave a similar reaction. In other forms of insanity, especially those coming from Cairo, a very large proportion of positive reactions occurred. For instance, in cases of pellagra 30 per cent. of the men, 22 per cent. of the women, gave a positive reaction. Of 554 cases of all varieties of insanity admitted, who were tested, 28 per cent. gave a positive Wassermann reaction. This certainly is a very astonishing result.

The Government Hospital at Khanka.

At Khanka Dr. Dudgeon also had overcrowding. Here much development is proceeding, though this was delayed to a certain extent during the last four years in consequence of the war. Not only have further buildings been developed, but a great deal has been done in the way of irrigation and tree-planting, so that this desert place is becoming an oasis.

Few hypnotics were used, and no seclusion, the large grounds and out-of-door occupations being found sufficient provision for discipline. Of course, the great advantage of Khanka over Cairo is that there is a large agricultural estate. Though Dr. Dudgeon was short-handed in the matter of staff, he managed admirably. The farm has been a financial success, besides supplying an enormous amount of useful food, both for Cairo and for Khanka.

Influenza, which was epidemic, added greatly to Dr. Dudgeon's work. Besides this, he reports that there were 30 cases of a febrile disorder which he took to be dengue.

His report upon pellagra is disappointing reading. He said little good, if any, followed any form of treatment, although every variety was tried. The symptoms were taken and dealt with one by one, and yet the patients gradually died. He says emphatically once a sufferer from pellagra always a sufferer; that though there may be remissions—in some cases prolonged remissions—yet he is inclined so think the disease always recurs and, sooner or later, ends in death.

He reported four cases of datura seed poisoning. This is a new form of poisoning to British observers.

A most interesting table is given as a result of the examination of the stools of 80 consecutive cases for parasites. Of these, 49 gave positive results for various types of worm, ascaris lumbricoides heading the list with 25; ankylostoma, 8; bilharzia, 5; oxyuris, 5; trichocephalus, 4; and distoma hepaticum, 1.

Admissions and Discharges.

The usual tables of admissions and discharges are given. Of the 365 admissions, 72 owed their insanity to pellagra, and 71 to the abuse of alcohol or drugs. There were more maniacal cases here than at the parent institution. Very interesting tables, of purely local interest, refer to the districts from which the various patients were derived. In the tables of treatment a considerable increase in the use of narcotics is recorded, thus contrastiug with Cairo hospital. But this Dr. Dudgeon considers to be purely a temporary matter, due to overcrowding.

In Dr. Dudgeon's report we have to notice the most satisfactory tables with details of medical and material administration, and one must congratulate him on the success of his work during trying and strenuous times.

In Part VII. of the report Professor Wilson gives a very full report on asylum diet. Though this is specially made with reference to Egypt, when circumstances make diet especially important, yet the physiological information contained in it has universal application. He recommends the addition of 45 g. of meal and 50 g. of milk to the ordinary ration. As so much more is now understood in reference to the deficiency diets and the vitamines similar observations might be made in British asylums.

Summary.

So that, to sum up, the Report of Lunacy in Egypt is satisfactory as far as the report is concerned. But the wants and the requirements are very great, and, with the disturbed state of the country, it seems that the work of the English administrators is greatly increased. Dr. Warnock, when he was in England recently, pointed out that the position of himself and other Europeans was not free from danger. We trust that the troubles will pass, and that once more there will be steady progress in relationship to lunacy in that country.

APPEAL FOR LIVERPOOL UNIVERSITY.

WITH a vision and courage that cannot fail to command the admiration of all who are interested in higher education, the University of Liverpool has launched an appeal for the sum of £1,000,000. The moving spirit behind this bold venture is the new Vice-Chancellor, Professor J. G. Adami, who, acquainted at first hand with the largesse bestowed upon the universities on the other side of the Atlantic, is seeking to awaken a similar generosity in and around Liverpool.

To mark the inauguration of the scheme a meeting was held in the Town Hall on March 12th. Lord DERBY (Chancellor of the University), who was prevented from attending, sent an appeal which was read at the meeting. It shows that this year the number of students availing themselves of the privileges of the University is more than double the total before the war. As a consequence the resources of the University are strained to the utmost, while each Faculty has had to refuse many students. The immediate needs are more class-rooms, laboratories, and workshops for students in chemistry and physics, engineering and electricity. The library, which may be termed the laboratory of the Arts students, must be enlarged. The great increase in the size of the classes calls for a corresponding increase in the staff of professors, lecturers, and demonstrators; and as students are pouring in from the surrounding districts it is necessary, if they are to enjoy that corporate life which ought to be a feature of all university education, to procure hostels or halls of residence for their accommodation. Provision must also be made for athletic grounds and a well-equipped gymnasium. The appeal concluded:—

"The University of Liverpool has proved its use. It is no longer in the experimental stage. ..... I call upon all in our

community who have its welfare and advancement at heart, upon all interested in the prosperity of Liverpool and of the district served by the University—West Lancashire and Cheshire, North Shropshire, and the counties of Flint and Denbigh, Westmorland, and Cumberland—to respond according to their means."

After an introduction from the LORD MAYOR, the President of the Council, Mr. HUGH R. RATHBONE, proposed this resolution:—

"That in the opinion of this meeting the needs of the University are so urgent that it is necessary to make a public appeal for funds to carry on this national work."

Liverpool University, he said, now stood at the forefront of the modern universities of the world. No doubt the lessons of the war had been responsible for a large part of the increase in the number of students, but the desire for more extensive and higher education had been growing rapidly throughout the country before the war came.

The Importance of University Training.

Professor ADAMI, in seconding the resolution, said that men in Liverpool and elsewhere had been heard to protest that they preferred to have anyone in their business rather than a university man. It was that spirit which nearly lost us the war, the contentment with rule-of-thumb methods and easy jogging along. No business man who had studied the events of the last five years could be in doubt as to the vital importance of enlarging and equipping our modern universities. It was only when the war was half-way through that our scientific men were withdrawn from the army and the universities all over the country called upon to make up for lost time at enormous cost. Students were now pouring into the University. Before the war the high-water mark was 1178. Now they had more than 2500 students. The University was full to bursting point and the staff was too small to deal with the huge classes, and their accommodation was altogether inadequate. The University already had a notable faculty of arts, but to-day they found the students coming to them were eager for increased knowledge in the principles of great scientific industries. With the chemical industry close to their doors they must do their best to meet the urgent cry for training in chemistry. Students were also asking for higher instruction in engineering—electrical and naval. They wanted laboratories for organic and inorganic chemistry, physical chemistry, colloid chemistry, and electrolytic chemistry. The laboratories, in existence since 1881, were lamentably inadequate for present needs. For new chemical laboratories £350,000 was required, and about £100,000 was wanted for the electrical engineering department. These were only a few of the urgent needs. They had to attend to the corporate and social life of the students. The students' union was only a quarter of the size required. The variety of commercial interests that now centred in the vast trade of the city demanded that they should train their young men in such practical studies as tropical medicine, oil-bearing sands, petroleum, refrigeration, and various transport industries. The University existed to increase the enlightenment and advance the prosperity of the whole of that part of the country from which it drew its students, and he looked to Liverpool to maintain its reputation for drive and progress.

Sir WILLIAM MCCORMICK, Chairman of the Advisory Committee on University Grants, and Sir WILMOT HERRINGHAM supported the resolution, which was carried unanimously.

Sir JAMES HOPE SIMPSON, General Manager of the Bank of Liverpool and Martin's Ltd., in moving support to the appeal, said that a commercial man did not look so much to a University for the technical training of his future employees as for the development of the qualities and the outlook which best fitted a young man for the responsibilities of a business career.

The Bishop of LIVERPOOL, in supporting the motion, said that if the wage-earning classes were to receive more wages and be given more leisure they must be given higher ideals, so that wages and leisure might be spent aright; and if an enlarged electorate was to exercise its opinions rightly on the great problems of to-day it must be taught to think in terms other than those of self and class.

Mr. C. SIDNEY JONES, the treasurer of the University, announced that promises and contributions amounting to £201,500 had already been received. These included, amongst other large sums, a gift of £25,000 to endow two chairs in engineering, £20,000 towards new chemical laboratories, £20,000 for the School of Social Studies, £20,000 for building and equipment of a special home for education and educational library.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Edinburgh Post-Graduate Courses in Medicine.

IN connexion with Edinburgh University and the Royal Colleges, special advanced courses for graduates will be held during the summer and autumn terms, and during the summer vacation. These courses include such subjects as clinical therapeutics, tuberculosis, diseases of the blood, renal, alimentary, and circulatory systems, bacteriology, serology, medical and surgical anatomy, special regions of the body, venereal diseases, and child welfare. The individual courses will be held subject to a certain minimum number of graduates entering for them, and in some cases a maximum limit will also be imposed. The teaching will be carried out by teams of physicians and surgeons under the direction of the University professors and lecturers. Arrangements will also be made, if desired, for special instruction in antenatal medicine, psychiatry, and dermatology. Graduates will be allowed to take out more than one course provided that the time-table makes this possible. Each course will be of a thorough and comprehensive nature in order to supply the want of graduates desiring advanced training in a particular subject. Full particulars may be obtained from the honorary secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

Edinburgh Royal Infirmary.

The Royal Infirmary of Edinburgh is suffering from the effect of high prices and cost of labour, and additional subscriptions are urgently needed. A special effort to raise £250,000 is announced; the campaign will be launched at an early date, and probably will finish about the end of June, with a week of intensive propaganda, when every available method of publicity will be brought into play. The coöperation of all is heartily invited.

University of Aberdeen: New Professor of Botany.

Mr. W. G. Craib, M.A., has been appointed Regius Professor of Botany in the University of Aberdeen, as successor to the late Professor Trail, whose pupil he had been. In India the new professor acted temporarily as superintendent of the Botanic Gardens in Calcutta, and he was for a time assistant at Kew. Coming to Edinburgh some five years ago, he was appointed lecturer on forest botany and Indian forest trees under Professor Bayley Balfour. During the war he was specially engaged in testing timber used in the manufacture of aeroplanes.

Child-Welfare Work in Scotland.

A conference was held in the City Chambers, Edinburgh, on March 10th, under the auspices of the Scottish Federation of Mother and Child-Welfare Associations, when the subject of the importance of a pure milk-supply was discussed. Attention was drawn to Dr. Addison's statement in the House of Commons that during the year 400 additional child-welfare centres had been established throughout the country and that the infant mortality-rate for last year was 89 per 1000, the lowest on record. In 1906, before the maternity work had been commenced, the rate was 145, while in 1914 it had fallen to 105. Mr. John Fraser addressed the conference on the dangers of impure milk in producing tuberculosis in children. 30 to 40 per cent. of the children occupying surgical beds were thus affected. Ingestion of tuberculous milk might produce various local lesions or, the bacilli passing into the blood,

infection might be carried to distant parts, such as the bones and joints. Precautions should be taken to render the milk harmless. The resisting power of better-class children was higher because of their superior nutrition. Dr. J. M. Lauder addressed the conference on the Production and Handling of Pure Milk, urging the establishment of a branch of the Clean Milk Society and the promotion of clean milk competitions. The eradication of tuberculous cows would require time, and he thought it would be reasonable at first to pay compensation to the people whose cows were destroyed. A resolution was carried calling on the Government to re-introduce the Tuberculosis Order and to bring into force the Milk and Dairies Act.

Panel Doctor's Action for Slander Upheld.

A libel action heard on appeal before the Lord Justice-Clerk has excited much interest. Dr. James Wylie, a doctor on the Glasgow panel, brought an action for slander against the general secretary of a local friendly society. The case centred round a certificate of incapacity given by the doctor on a date on which it was understood, erroneously, by the secretary that the patient was still away from home. The secretary thereupon stated in a letter to the Insurance Committee that a certificate had been granted by the doctor without seeing the patient and in contravention of the law. At the first instance Sheriff-Substitute D. J. Mackenzie found that the secretary's letter was defamatory and malicious, and awarded damages to the doctor. On appeal Sheriff A. O. M. Mackenzie reversed this decision on the ground that the occasion of writing the letter was privileged, and that malice had not been proved. The Division finally upheld the first judgment on the ground that the letter had been sent without due inquiry, and that the defender's recklessness in making the charge against the pursuer, without regard to its serious nature and to the want of information on which it was founded, amounted to legal malice, disentitling the defender to plead privilege. The Medical and Dental Defence Union of Scotland is to be congratulated on its successful vindication of the good name of the panel doctor.

March 16th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

"Carriers" of Scabies.

M. Gougerot has published some careful observations made in the dermatological department of the Hospital St. Louis. It appears that certain people, even if sharing the bed of someone suffering from scabies, do not become infected, being apparently immune from the disease. M. Gougerot has noticed this phenomenon in subjects dark or fair, thin or fat, without being able to determine the conditions which influence their immunity. Moreover, he has observed that some people who do not themselves contract scabies, though exposed to the infection, are yet capable of transmitting it to a third person. For example, a prostitute may transmit the disease without herself suffering therefrom. It seems as if the acarus could live on the skin without penetrating it; the "carriers" do not cease to be contagious until they have themselves been treated for scabies, though they present no lesion whatever. These observations, the accuracy of which are guaranteed by the reputation of M. Gougerot, have raised a good deal of controversy.

The Difficult Position of the Medical Profession in France.

The medical profession in France is at present in the throes of a crisis. The general augmentation of the cost of living consequent on the low rate of exchange has caused a considerable increase in their normal expenses. The prices of commodities, clothes, and instruments have tripled; those of servants, cars, and books have doubled. Fees have had to be increased, but the public, themselves obliged to economise on all those expenses which are not, like food and clothes, immediate necessities, compensate themselves for this increase by sending less often for the doctor. They even try to dispense with his attendance for as long as possible. In many families appeal is made to the medical lore of a relative, or advice is sought from a friend who has been a hospital nurse during the war and is proud to show off her accumulated wisdom. People resort also to proprietary medicines which can be delivered without prescriptions. These proprietary productions have had a considerable boom recently, and a proof of their prosperity is that discussions on their merits are now appearing in political journals. The middle ranks of the profession are the hardest hit. The suburban and country doctors with a family practice are relatively little affected, as are also the eminent scientists whose advice is sought by the rich. But ordinary specialists and practitioners of the better class, whose patients used to be the bourgeois families, see the number of their consultations diminishing to a degree in no way compensated for by their raised fees. At the same time it is on the doctor that the burden of rates and taxes falls most heavily, and he is unable to defend himself, as does the working man, by threatening to strike. In the districts formerly invaded by the enemy the situation is even worse. The Government has called for the coöperation of doctors, who are asked to give their services to people living under miserable conditions in caves and barracks pending the reconstruction of their houses, and unable to pay their doctors adequately. Certain practitioners have been promised fixed appointments, with free provision of motors, tyres, petrol, and surgical instruments. But the organisation is so bad that after a few months, during which they have been unable to obtain tyres or petrol, or to get repairs done to cars damaged by the bad roads, most of them have renounced the illusory advantages promised them and have gone away. Many of the regions in the north of France are thus without doctors, who have come back to join the already overcrowded profession in Paris. Several of them are leading a miserable life there, and one doctor, an officer of the Legion of Honour, was recently heard to announce to his colleagues at a congress his intention of applying for a post as sweeper in the municipal service, so as to be certain at least of a monthly salary for an eight hours' working day.

Strike in the Printing Trades.

Owing to a printers' strike hardly any medical journals have been published for the last fortnight. It is not yet known when work is to be resumed.

An Extension of the Paris Maternity Hospitals.

M. J. L. Breton, Minister of Hygiene and Social Service, accompanied by M. Desmars, Director of Public Hygiene, and by M. Legendre, has visited the asylum of Vesine, which is now empty and capable of accommodating 490 beds. He has decided to take over the asylum as an addition to the maternity hospitals of Paris, which are very overcrowded. Arrangements have been made for 40 beds at least to be ready next week, and the remainder will soon be available.

March 15th.

DEVONSHIRE TUBERCULOSIS COLONY.—At the last meeting of the Devon County Council it was stated that the council was now in a position to establish the tuberculosis colony at Hawkmoor Sanatorium for the training of tuberculous ex-Service men, and also to provide a school for children who had incipient signs of the disease. The Red Cross Society has given £18,000 to the scheme.

DORSET COUNTY HOSPITAL, DORCHESTER.—The annual meeting of the subscribers to this institution was recently held. The medical report was satisfactory, while the financial statement gave the receipts as £5782 and the expenditure as £7538. The committee made an urgent appeal for increased financial support, so that the hospital "could live on its income and not its capital." A special appeal is being made for £7000 for alterations and improvements to the hospital. The British Red Cross Society has made a grant of £2500 towards this amount, and it is hoped that the balance will shortly be raised.

Correspondence.

"Audi alteram partem."

ANÆSTHETISTS' FEES.

To the Editor of THE LANCET.

SIR,—I think the time is now suitable for drawing attention to the inadequacy of the fees which formerly have been offered to special anæsthetists for their attendances at private operations. When it is considered that men with a staff appointment at one or more hospitals often attend for many hours a week, and administer over a thousand anæsthetics a year for charity, proper payment for their skill, which will cover expenses, and yield an income proportionate to the value of their work and experience, is the least desideratum. The major operations command handsome fees for the surgeon, and should also reward the anæsthetist, primarily according to the duration of his attendance, and in some degree according to the quality of his labours.

In addition to these points, the administration of nitrous oxide and oxygen for surgical work, besides being far more expensive in apparatus and outlay than the older methods, is a far greater strain upon the faculties and attention of the administrator than anything else which has yet been attempted. Where this anæsthetic is suggested, a fee of from 15 to 20 guineas is required to pay the administrator commensurately for the undertaking. It ought not to be necessary to point out to the operating surgeons of the day that the requirement of a heavier fee by the professional anæsthetist does not diminish, but enhances, the public estimate of the value of their own performance.

I am, Sir, yours faithfully,

H. BELLAMY GARDNER.

Harley-street, W., March 14th, 1920.

REMOTE EFFECTS OF SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER.

To the Editor of THE LANCET.

SIR,—The value of a discussion on the remote effects of surgical treatment of gastric and duodenal ulcer, such as that held recently at the Royal Society of Medicine,[1] depends on the comparative results obtained by various lines of treatment, and this to be of real value requires a general agreement on methods. There is at present no real standardisation of treatment; there are those who believe that these ulcers are a local condition, primary and independent of pathological conditions elsewhere; there are others who consider that they depend for their occurrence on some pre-existing infective focus—e.g., in connexion with the teeth, nose, gall-bladder, appendix, intestinal tract, &c. The former class should be content with local excision, the latter must seek for and eliminate the distant focus as well as adopt some local treatment. That there is confusion here is evidenced by the frequently expressed condemnation of excision alone as a cure for gastric ulcer, and the common belief that a permanent cure follows successful suture of a perforated gastric ulcer. Then, while there is general agreement that gastro-enterostomy is the operation of choice for duodenal ulcer, there is wide difference of opinion as to the value of gastro-enterostomy in gastric ulcer (excluding pyloric ulcer), as to the type of case in which to do partial gastrectomy, and as to the methods of performing it (Billroth II., sleeve resection, anterior Polya). Even there is no agreement on the danger or otherwise of the unabsorbable suture. I think these disagreements are due more than anything else to the neglect of the "follow up" investigations, which such a discussion as we have had does much to stimulate. The less we follow up our cases the more rosy our views on our results. I have followed up my gastric and duodenal cases fairly consistently since my first operation some 15 years ago, and though I am satisfied with the immediate results of gastro-enterostomy (my longest run without a death was 105) and of its great value in duodenal ulcer, I am becoming more critical of its value in gastric ulcer unless that ulcer is quite close to the pylorus, and I am doing more partial gastrectomies than I did.

The discussion centred on the late results of gastro-enterostomy, and particularly on the occurrence of gastro-jejunal and jejunal ulcer. I have never seen an instance of a pure jejunal ulcer, and have had only two instances of gastro-jejunal ulcer (found at re-operation) in my own practice. In both cases I found a silk suture adherent at the seat of ulceration. In view of the rarity of gastro-jejunal ulcer and the frequency with which gastro-enterostomy is performed with non-absorbable suture, it seems unreasonable to believe that the single factor of a non-absorbable suture is the cause of this complication. I am inclined to believe that a combination of four factors is necessary: (1) hyperchlorhydria persisting or recurring after operation; (2) an unabsorbable suture; (3) an undiscovered or uncured primary focus causing the original ulcer; (4) an error in technique, in this case drawing the suture too tight. It is well known that tight suturing of muscular tissue leads to local necrosis, and, indeed, is the commonest cause of failure of radical cure of inguinal hernia.

In a recent "follow up" of 50 consecutive cases of gastro-enterostomy, operated on six months ago or longer, I have been able to trace 24 out of 26 duodenal ulcer patients, of whom 19 are completely restored to health = 79 per cent., while of 24 gastric ulcer cases I have traced 19, of whom 12 are completely restored to health = 63 per cent.; of these gastric ulcer cases 2 were known to be cancer and died 6 weeks and 18 months after operation, and 2 others were considered cancerous at operation and are now quite well.

One of the commonest complaints after gastro-enterostomy is a feeling of fullness in the epigastrium directly after food. I believe this to be due to the rapid emptying of the stomach into the jejunum, and I advise all my patients for the first six months to eat small meals very slowly, and to lie down on the left side for half an hour afterwards. It would be interesting to hear the opinion of surgeons as to when we can consider a patient cured after an operation in which the ulcer is neither excised nor otherwise treated. My experience leads me to believe that if complications arise they will show some sign within two years from the operation, and I lay down as a rule, quite arbitrary I fear, that the ulcers must be considered unhealed for six months. I feel sure it is unwise, encouraged by the relief of pain and return of appetite, to allow an early return to a generous diet.

I am, Sir, yours faithfully,

Harley-street, W., March 15th, 1920. H. W. CARSON.

[1] THE LANCET, March 13th, p. 598.

SLEEPING SICKNESSES.

To the Editor of THE LANCET.

SIR,—In the interests of historical accuracy may I venture to demur to the statement in your annotation of March 13th under this heading that at the combined sections of the Royal Society of Medicine in November, 1918, it was agreed to follow von Economo in the use of the word "encephalitis lethargica"? The meeting (which took place in October) was convened to discuss epidemic encephalitis, and the record in the Society's Proceedings is thus entitled. The name "encephalitis lethargica" was certainly employed by some of the speakers at the meeting, but no formal agreement with von Economo's nomenclature was proposed. Compliance in this country with von Economo's practice was a consequence of the benediction given to it by the Local Government Board, and the disuse into which, outside Great Britain, it is rapidly falling is due, not only to the objection of cumbersomeness that you raise, but to recognition of the fact pointed out by the minority in 1918, which has been recently expressed by Professor Chauffard (Académie de Médecine, séance du 17 Fév., 1920) in these words: En raison de la multiplicité des formes récemment décrites de l'encéphalite léthargique, le nom de cette maladie est devenu trop restrictif et *ne répond plus aux réalités cliniques.*

If, however, undue attention has been paid to the views of von Economo, it would seem that undue neglect has attended those of Mauthner, also of Vienna, who in 1890 recognised "nona" as a phase of Heine-Medin disease. And it should not escape notice that at the present time there is in Vienna an epidemic of encephalitis that, from the clinician's point of view, is like some of the Australian outbreaks in 1917–18, not lethargic but convulsive. The Viennese physicians appear now to realise that we have to do with a protean encephalomyelitis that is in epidemiological liaison with influenza, as some of us at home have consistently believed.

But it is also interesting to note that the present Viennese cases appear to be indistinguishable clinically from what was once described as "Kriebelkrankheit" and "r(h)aphania," and ascribed to ergot, radish seeds, and sour apples. The contention put forward by me in 1918 (Proc. Roy. Soc. Med., vol. xii., Sect. Hist. of Medicine) that the "Kriebelkrankheit" and raphania were really identical with the protean encephalomyelitis that almost invariably has preceded attended, and followed wide diffusions that we call influenza appears therefore fortified by the course of events.

I am, Sir, yours faithfully,

Wimpole-street, W., March 13th, 1920. F. G. CROOKSHANK.

CIRCUMCISION AND CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Sept. 20th, 1919, Mr. H. Tyrrell Gray and Dr. G. R. Pirie, in a most interesting and searching study of this stomach malformation of infants, point out the association of phimosis or preputial adhesions as a possible factor of causation of the events leading to projectile vomiting characteristic of this lesion, whether there be a definite organic or merely a spasmodic block of the pyloric end of the stomach. Later, in the issue of Feb. 21st, 1920, Mr. Joseph E. Adams relates a case where circumcision temporarily relieved all symptoms only to end fatally a week later. I notice in his concluding remarks that granting, as in his case, no actual pyloric lesion or any gastritis was present, and that circumcision temporarily relieved the symptoms, "other factors" of causation are present which one cannot expect to relieve by circumcision.

A case recently came under my care which forcibly shows the value of circumcision and yet raises doubt in the mind as to whether "other factors" are not present in the neuro-muscular mechanism of the stomach which may produce "projectile vomiting" and the train of symptoms associated with congenital pyloric stenosis. A child, aged 3 weeks, was brought to me with every one of the classical symptoms which were so lucidly arranged in Mr. Gray and Dr. Pirie's article. Complete pyloric block was confirmed by radiographic inspection. A very tight prepuce was noted. At operation the pyloric lesion was of the hard avascular type, the mass being as large as a big acorn. In my zeal to ensure success by wide section in the Rammstedt's operation, I punctured the duodenum, which was promptly repaired and reinforced by a piece of omentum. As the infant virtually died on the table, circumcision was postponed. After a struggle the infant survived, and in the second week he put on 7 oz., peptonised milk being used. On the sixteenth day sudden alarming projectile vomiting returned. To eliminate any indiscretion of feeding, albumin water only was given by mouth and saline repeated by rectum. No relief ensued and the child began to fail. I therefore circumcised him at the end of the second day. The vomiting ceased as by magic, and in six hours no further feeds were rejected.

It is now 14 days since circumcision, and the child is well and progressing steadily. Now, in this case, as far as is surgically possible, the muscular and serous coats of the pylorus and the adjacent portion of the stomach and duodenum were cleanly and thoroughly divided, so that spasm at this site was not likely to recur. And yet recurrent "projectile vomiting" recurred until relieved by circumcision.

In opening myself to criticism as to any faulty technique, I ask, "Is it possible for 'other factors' to cause projectile vomiting, such as reversed gastric peristalsis stimulated by a tight foreskin, without necessary involvement and block of the pylorus?" It seems possible, as this infant is alive and well, with no further symptoms when the recurrence of vomiting came on after surgical relief of the original pyloric spasm and obstruction had been secured by section of the muscular coats.

I am, Sir, yours faithfully,

R. ECCLES SMITH, O.B.E., M.B., F.R.C.S.

Barry, Glam., March 17th, 1920.

MYALGIC PAINS AND MANIPULATION.

To the Editor of THE LANCET.

SIR,—Mr. Haldin Davis, in your issue of Jan. 10th, suggests that there is "something in manipulative surgery," and Mr. W. H. Clayton-Greene (March 13th), admits that "the manipulative surgeon possesses some skill which he ..... lacks." May I suggest that the latter should substitute *knowledge* for *skill*. Of course, there is something in manipulative surgery, and it is to be hoped that many surgeons practise this branch of their art. I at least may claim that I have been both practising and teaching it for many years, and I believe that the same is true of other orthopædic surgeons. The trouble is that the teachers of manipulative methods, from Wharton Hood onwards, have failed to secure the ear of the profession as a whole, and that the importance of the study of the physiology of joints and muscles has never been recognised. It is perfectly true that many cases of derangement of the knee-joint can be cured without operation. Why? Because in some of them there has been no injury to the semilunar cartilages at all, and in others the damaged cartilage can be prevented from causing locking of the joint by physical treatment. Mr. Clayton-Greene appears to look upon the bone-setter as endowed with some peculiar mechanical skill which enables him to carry out manipulations which he (Mr. Clayton-Greene) cannot imitate. Surely the fallacy of this myth has long ago been exposed by Wharton Hood. The rules of manipulative methods are simple: first restore a perfectly full range of movement in the joint or joints, and, second, by appropriate exercises, assisted, when necessary, by direct faradic stimulation of the muscles, give these back their full power. Patients with derangement of the knee-joint should only be submitted to operation when continued locking of the joint takes place in spite of the fact that the mobility is full and the muscles strong.

Another condition commonly and successfully treated by the bone-setter is a chronic painful swelling of the ankle. Three times recently have I had to treat such a condition in a patient who had been subjected to prolonged fixation of the joint for alleged tuberculous disease. In each case mobilisation under an anæsthetic, followed by appropriate walking exercises, has effected a speedy cure. Adhesions on the front and outer side of the ankle were the sole cause of the trouble. I claim no special skill in manipulation: all that is necessary is the recognition of the pathology of the lesion and of the fact that interference with the normal physiological action of the foot is sufficient to account for both pain and swelling.

By all means let us have the inquiry suggested, if the bone-setters will agree. But bone-setters are not too anxious to give away the extreme simplicity of their methods, and their attitude to a committee, including surgeons able to sum the methods up, is at least doubtful.

I am, Sir, yours faithfully,

Portland-place, W., March 13th, 1920. R. C. ELMSLIE.

THE EMPLOYMENT OF FEMALE NURSES IN MENTAL HOSPITALS.

To the Editor of THE LANCET.

SIR,—In your issue of March 6th your Scottish correspondent summarised very accurately the last report of the Royal Edinburgh Asylum, but there is, unfortunately, a misstatement in the last sentence. It is there recorded that the male nurses of the asylum

had submitted a demand that female nurses should no longer be allowed to attend male patients. As this question is a very important one at the present time owing to the action of the National Asylum Workers' Union, which wishes to abolish this form of nursing, I desire to say that no such action has been taken by the male nurses.—I am, Sir, yours faithfully,

GEORGE M. ROBERTSON, M.D.

Edinburgh, March 15th, 1920.

THE VAGINOTOME.

To the Editor of THE LANCET.

SIR,—Under the above heading Mr. Aleck W. Bourne describes in your issue of Feb. 21st an angled knife for cutting through the vagina after a clamp has been placed

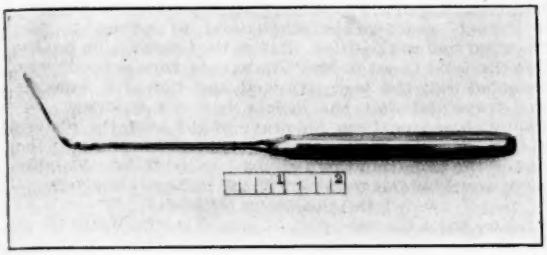


FIG. 1.—Mr. Blair Bell's vaginotome.

in position in radical operations for cancer of the cervix. I am afraid I have forestalled him by some six or seven years. I enclose a photograph (Fig. 1) of an identical instrument,[1] with the exception that mine is double-edged, which I have used for the period mentioned, as many can testify. Nevertheless, I prefer to use, when possible, a cautery-knife.

FIG. 2.—Vaginal clamp, with excised specimen.

Perhaps, before someone else invents it, I may be allowed to enclose for reproduction also a photograph (Fig. 2) of my vaginal clamp for use in radical operations for cancer of the cervix. It is only a rough model made in the laboratory, and requires certain obvious improvements when I can find an instrument-maker who can promise to get the work done. I have used this instrument for an even longer period. It embodies, I believe, sound mechanical principles and is easy of application. It will be seen that the specimen, as excised at operation, has been photographed in the clamp before being removed.

I am, Sir, yours faithfully,

Liverpool, Feb. 22nd, 1920. W. BLAIR BELL.

[1] Made and kept in stock by Messrs. Alexander and Fowler, Liverpool.

OSTEITIS FIBROSA.

To the Editor of THE LANCET.

SIR,—I was much interested in Mr. N. C. Lake's case of osteitis fibrosa published in THE LANCET of March 6th, and the radiogram is certainly strikingly like that of my case which you reprint with it. The suggestion in the text, however, is that the X-ray appearances would lead one to expect gross cyst formation, and it is implied that this was present in my case. A reference to my article in THE LANCET of Nov. 15th last will, however, show that such was not the case, although it is true that minute cyst formation was found under the microscope. I pointed out in that article that the femur is the common site of non-cystic osteitis fibrosa, and that the reason probably is that cyst formation is a slow degenerative change, and that the weight-bearing functions of the femur call attention to the condition in that bone before cyst formation has had time to occur. The history of Mr. Lake's cases, particularly the first one, is interesting, but there seems no definite evidence that the osteitis fibrosa did not antedate the trauma in both cases. I am, Sir, yours faithfully,

London, March 10th, 1920. E. G. SLESINGER.

INTENSIVE IODINE TREATMENT.

To the Editor of THE LANCET.

SIR,—Having read Dr. T. Bird's interesting note on this subject in THE LANCET of March 6th I wish to add my testimony as to the result of the treatment. I have used the French tincture for some years in rheumatic and arthritic cases with very great success; I cannot call to mind a single case of iodism or any untoward symptoms arising. I usually prescribe at first 2 gr. three times a day immediately after meals, gradually increasing the dose until the patient is taking 10 gr. daily. It is remarkable how the pain and swelling are relieved, and as soon as this occurs I gradually decrease the dose. After a short interval the doses are again gradually increased in old-standing cases. There is not the slightest doubt that the absence of iodide of potassium in the tincture of the French codex enabled the administration of iodine in larger doses and with better results in the foregoing cases than the administration of potassium iodide.—I am, Sir, yours faithfully,

CLAUDE ST. AUBYN-FARRER.

Harley-street, W., March 9th, 1920.

OPERATION UNDER DIFFICULTIES.

To the Editor of THE LANCET.

SIR,—The recent war has doubtless supplied many instances of surgical operations successfully performed under the most unfavourable and apparently hopeless conditions. Yet few, if any, would equal the description and circumstances of "An Operation under Difficulties," reported by Dr. Nathaniel Crichlow in THE LANCET of Feb. 7th. The remarkable and striking success which attended his impromptu efforts, though modestly attributed to the natural immunity of the Solomon Island native, completes a thrilling story of what can be achieved in a surgical emergency. As an example of an emergency operation performed under embarrassing conditions, in the heart of the West African forest at midnight, while a tornado was raging, the following incident, which occurred in the course of the Anglo-French Boundary Commission's survey of the Gold Coast and Ivory Coast Colonies in 1903, may

prove of interest. In this case, too, the patient was a native, and his eventual recovery lends support to Dr. Crichlow's view of the natural resistance to septic infection, and possibly shock, displayed by the native races. The circumstances to be faced were not, indeed, as unfavourable as those confronting Dr. Crichlow, for, though the operation was a serious and difficult one, the operator had the advantage of surgical instruments and dressings with means of sterilising, also the uncertain asset of a native dispenser as chloroformist and the unskilled assistance of a French officer as dresser.

The expedition on its return journey from completion of the boundary survey between the Ivory and Gold Coast Colonies had halted on the afternoon of March 8th (1903) at Ngwanda, a small forest village situated near the frontier, and composed of a collection of half-ruined native huts, only one of which was at all habitable for Europeans. At about 7 P.M., during a violent storm of wind and rain, and just as the members of the Commission were sitting down to dinner, the medical officer was suddenly called to see the native cook of one of the French officers. The boy, who was lying on a bed made of carriers' loads in a tiny bamboo hut, complained of great pain in the belly, and had had no action of the bowels for two days. Constipation and belly-ache, for which the "Livingstone Rouser" usually proved quite efficacious, were common enough troubles of daily occurrence among the morning sick. But in this instance it was timely ascertained that the boy had been ruptured for several months, although the condition had never sufficiently troubled him to seek medical advice. Examination revealed a large hernia occupying the scrotum on the right side, and about the size of a fœtal head at term, very tense, and apparently irreducible. Symptoms of strangulation had lasted an hour and he vomited soon after he was seen.

In anticipation of the probable necessity of operation, preparations were accordingly made as quickly as possible. With the patient's hips immersed in a hot bath all attempts at reduction by taxis, even when he was under the influence of chloroform, failed. Operation was therefore at once proceeded with under conditions which seemed anything but hopeful. The walls of the dilapidated hut inclined at an angle and, owing to the increasing force of wind and rain, threatened to overwhelm the occupants at any moment. To avoid such a catastrophe it was necessary to support the frail structure with propping poles as buttresses on the leeward side. Through the scantily thatched roof the deluge of rain beat its way in copious streams at various points during the greater part of the night. The only light for operating by was a reading candle-lamp with reflector. The supply of antiseptics was limited, and eventually the use of boiled rain-water was resorted to. Chloroform was very successfully administered by the native dispenser, and but for his help it would have been impossible to save the boy's life.

The necessary incision was made in the right inguinal region and the bowel was exposed. Though much congested, particularly at the place of constriction, there was no evidence of actual peritonitis or commencing gangrene, and well for the patient that resection of the gut was not called for! There was considerable difficulty in returning the distended and congested coil of gut to the abdominal cavity and in retaining it in place. This was, however, eventually successfully accomplished, and it was possible to attempt a partial closure of the inguinal ring by stitching with sterilised silk-worm gut in the hope of securing a radical cure. There was fortunately no hæmorrhage of any importance during the course of the operation, which the patient bore remarkably well. A small drainage-tube was inserted, the wound was stitched up, dressings applied, and by 1 A.M. the difficult task was over. The boy's pulse was good, he vomited twice during the remainder of a restless night, and his bowels acted at about 4 A.M. Thirst was much complained of, and partly relieved by sips of hot water. When daylight came, as his general condition was quite satisfactory, and it was impossible for him to be properly attended to in such incommodious quarters, it was considered justifiable to risk his removal to the nearest Government bungalow. He was, therefore, carefully carried by hammock to the English post at Debisu, a distance of 15 miles through the forest. The trying effect of this journey luckily led to no harm and was well tolerated. After being nursed for ten days in the Commissioner's house the patient had so far recovered as to be able to be brought down by easy stages to Djemma, some 40 miles further south, by the end of March. On April 3rd—i.e., nearly four weeks after his operation—he was allowed to get up, as the wound had completely healed.

A few days later the hernia showed signs of recurrence. It was, however, easily reduced and was kept in place by means of a truss, which by good chance it had been possible to obtain from the surgical stores of a French post within reach and to adjust to the required size and position. Before the Commission finally left the Gold Coast in May the satisfactory account was received that the boy was well and was still wearing the truss and that the hernia had not recurred. So happy an escape from his grave plight even the rosiest optimist would scarcely have ventured to predict; for under the conditions which had to be faced, the odds were anything but in favour of the patient's recovery.

I am, Sir, yours faithfully,

London March 8th, 1920. VIATOR MEDICUS.

"REMINISCENCES OF THREE CAMPAIGNS."

THE following correspondence has been forwarded to us for publication by Sir Launcelotte Gubbins.

[ENCLOSURE.]

Sir Alexander Ogston, K.C.V.O., &c.

DEAR SIR,—A few days back, when in the library of a London club, I took up a book entitled "Reminiscences of Three Campaigns," by Sir Alexander Ogston, K.C.V.O., &c., and glancing through it I came across at p. 71 (as well I can recollect) the following sentence: "An army medical officer in high command in General Kelly Kenny's army and who afterwards rose to the rank of Director-General, wrote, I believe, to headquarters complaining of my wearing the Queen's uniform without authorisation."

As during the South African War I was P.M.O. (to use the old title) on the staff of Sir Thomas Kelly Kenny, commanding the 6th Division, the above could only apply to me, and I would be glad to know your authority for making a statement which I most emphatically repudiate. Not having the honour of your acquaintance and not knowing you—even by sight—it was a matter of complete indifference whether you were dressed in uniform or not.

It is not always—to put it mildly—judicious to base an assertion on a mere belief, but it might interest you to know that, so far from being the hide-bound official you seek to portray, I was throughout the campaign entirely in favour, both on administrative and disciplinary grounds, of all civil surgeons employed with the army, being—in addition to wearing uniform—granted temporary commissions in the R.A.M.C., a course which was adopted with conspicuous success during the recent world-wide conflict.

Faithfully yours,

(Signed) LAUNCELOTTE GUBBINS,
Lieutenant-General (retired), and late Director-General, A.M.S.

Belvedere Drive, Wimbledon, Surrey, March 6th, 1920.

Lieutenant-General Gubbins.

DEAR SIR,—I am favoured with your letter of the 6th instant, concerning a paragraph in my "Reminiscences." I greatly regret that the paragraph was inserted, and am sincerely sorry that it has caused you annoyance. I shall see that in future the paragraph is omitted or corrected.

Yours faithfully,

(Signed) ALEX. OGSTON.

252, Union-street, Aberdeen, March 11th, 1920.

THE SALARY OF POLICE SURGEONS AT BRISTOL.—The allowances of police surgeons for professional services for each member of the force has been increased from 7*s.* 6*d.* to 10*s.* per annum, and the salary of the chief police surgeon will in future be £200 a year instead of £150. These increases in remuneration do not appear to err on the liberal side.

Obituary.

CHARLES EDWARD LIESCHING, M.R.C.S., L.R.C.P.,

CONSULTING SURGEON, TIVERTON HOSPITAL.

Mr. C. E. Liesching died suddenly on March 4th, when apparently convalescent from an attack of influenza, at his residence at Tiverton. He was born in Ceylon 57 years ago, and was educated at Blundell's School, where he was in the cricket XI. and the football XV., and at St. George's Hospital. He qualified M.R.C.S. in 1885 and L.R.C.P. in the following year, and subsequently held the posts of ophthalmic and orthopædic assistant at St. George's Hospital, clinical assistant at the Victoria Hospital for Children, Chelsea, and house surgeon at the Stroud General Hospital. He returned to Tiverton as partner of the late Dr. W. R. Haydon, and soon acquired the respect and esteem of a large circle of friends and patients. Imbued with a deep love of his profession and a keen sense of duty, he took a great interest in his patients' welfare.

Mr. Liesching had contributed to THE LANCET, and took much interest in the advancement of medical and surgical knowledge. Preventive medicine appealed strongly to him, and as a member of the town council for over 20 years he constantly strove for the improvement of the local sanitation and water-supply. He was a member of the Education Committee and of the Joint Hospital Board for the isolation hospital, and consulting surgeon to the Tiverton Hospital. For some years he lectured in connexion with the St. John Ambulance Association, and on the outbreak of the war he took a leading part in organising a voluntary aid hospital, of which he was appointed medical officer. He was a magistrate for the borough of Tiverton. In addition to his many other duties, he devoted much time to religious activities, being honorary local treasurer for the British and Foreign Bible Society, superintendent of St. Paul's Sunday School, and a lay reader.

Mr. Liesching, in 1891, married his cousin Annie Kathleen, daughter of Surgeon-General W. Carden Roe, and leaves a widow, five sons, and five daughters, for whom much sympathy has been manifested in the district.

WILLIAM AUGUSTUS BONNEY, M.D. BRUX., F.R.C.S. EDIN.

THE death has occurred, at his house in Elm Park-gardens, of Dr. W. A. Bonney, at the advanced age of 80 years; he died in harness, for he contracted influenzal pneumonia while still in attendance upon patients.

William Bonney had a long connexion with South-West London. His grandfather, a solicitor at Brentford, was imprisoned in the Tower of London with Horne Tooke, then Vicar of Brentford, at the end of the eighteenth century on a charge of conspiracy—they being, it is alleged, the last political prisoners to be lodged in the Tower of London. His father, named Francis Burdett after the famous Liberal politician, was a doctor at Brentford, and Dr. Bonney served his original apprenticeship at the adjoining suburb of Twickenham. He joined the medical school of the Middlesex Hospital in 1863 and upon qualification was appointed resident obstetric officer to the hospital. In 1867 he returned to his native quarters, and for upwards of 60 years practised his profession at various addresses in Chelsea. He started practice in one of the charming old houses recently demolished in King's-road, opposite Paulton-square, but in 1880 he moved to Beaufort-street and in 1891 to Elm Park-gardens. He thus saw the complete transformation of Chelsea from a picturesque suburb to a modernised, though attractive, residential neighbourhood.

Dr. Bonney was an exceedingly good general practitioner—a man of strong opinions and great attainments. His resolution to remain abreast of professional knowledge is well shown in the dates at which he obtained his various qualifications. He first qualified as M.R.C.S. in 1866, but in 1880 he took the L.R.C.P. and L.M. of Edinburgh, and two years later the M.D. degree at Brussels. Finally, in 1895, when 54 years old, he became, by examination, a Fellow of the Royal College of Surgeons of Edinburgh, studying for the diploma at the Middlesex Hospital, where his son Victor, now a member of the honorary staff, was at that time a student.

Dr. Bonney married in 1870 the daughter of a neighbouring physician, Dr. Victor Poulain, and had three sons, two of whom are in the medical profession.

JAMES CHRONNELL, M.R.C.S., L.R.C.P.,

MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER FOR HINDLEY URBAN DISTRICT.

THE death occurred on March 10th at Ash Cottage, Hindley, of Mr. James Chronnell, who was police surgeon for the Ince Division of the Lancashire county police and medical officer of health and school medical officer to the Hindley urban district. He had recently been appointed whole-time medical officer of health and school medical officer, and was retiring from the general practice he had held for 32 years to take up these duties. He was one of the best known practitioners in the district, and was held in high esteem alike by the public and his fellow practitioners. Behind a somewhat stern exterior, to those who knew him Mr. Chronnell was a true and generous friend and a wise counsellor. His large practice and his numerous public appointments occupied his time of recent years to the exclusion of his former athletic hobbies, and, though a keen motorist, his interests were almost entirely centred in his profession. His duties were carried out with the perfection of thoroughness. The increased strain of the war and the loss in action of his only son, Captain Hubert Chronnell, M.C., of the Loyal North Lancashire Regiment, helped in no small measure to undermine a strong constitution. Complications supervening on glycosuria a fortnight ago ended in a sudden attack of syncope. Mr. Chronnell is survived by his widow and an only daughter. The funeral took place on March 13th at Castle Hill Cemetery, and was largely attended. The gap left by the deceased is one that will be hard to fill. There remain of him a fragrant memory and a monument of work well done.

The Services.

ARMY MEDICAL SERVICE.

Major-Gen. Sir W. W. Pike is placed on retired pay.

Cols. E. H. Condon and A. G. Thompson retire on retired pay.

ROYAL ARMY MEDICAL CORPS.

Temp. Capts. J. W. C. Gunn, L. R. Broster, A. C. Bryson, N. McA. Gregg, and F. J. Fahy relinquish the acting rank of Major.

Temp. Capt. G. Marshall to be acting Major.

Capt. S. Robertson resigns his commission.

Capt. G. J. Keane retires, receiving a gratuity.

P. H. S. Smith, late Surgeon-Lieutenant, R.N., and Temp. Lieut. G. A. Fothergill to be temporary Captains.

G. R. Waller to be temporary Lieutenant.

Officers relinquishing their commissions:—G. W. Milne (granted the rank of Lieutenant-Colonel). Temporary Captains granted the rank of Major: A. C. Hancock, H. Dudley (acting Major). Temporary Captains retaining the rank of Captain: J. K. Clarke, T. W. Shaw, W. H. Swaffield, A. Leach, C. Dean, W. L. Locke, J. M. D. Scott.

SPECIAL RESERVE OF OFFICERS.

Capt. (acting Major) E. J. Bradley and Capt. W. B. Foley relinquish the acting rank of Major.

Capt. J. W. Mann relinquishes his commission and retains the rank of Captain.

Capt. D. McEachran relinquishes his commission.

Capt. A. W. Wells resigns his commission.

Capts. (acting Majors) J. St. G. Wilson and E. C. Hobbs relinquish the acting rank of Major on ceasing to be specially employed.

Capt. (acting Major) M. Coplans relinquishes the acting rank of Major on ceasing to hold the appointment of Deputy Assistant Director of Medical Services.

2nd London Sanitary Company: Capt. D. Smith is restored to the establishment.

3rd Southern General Hospital: Capt. R. E. Humphry relinquishes his commission and is granted the rank of Major.

ROYAL AIR FORCE.

Medical Branch.—Flight. Lieut. H. W. Scott to be acting Squadron Leader whilst employed as Squadron Leader.

The undermentioned are transferred to the unemployed list:—Capts. A. E. Collie, H. F. Squire, G. Dunderdale; Lieut. R. E. Burns.

Dental Branch.—Capt. A. C. S. Cottam is transferred to the unemployed list.

INDIAN MEDICAL SERVICE.

Majors to be Lieutenant-Colonels: (Bt. Lieut.-Col.) J. D. Graham, (temp. Lieut.-Col.) C. A. Sprawson, (Bt. Lieut.-Col.) M. Mackelvie, (acting Lieut.-Col.) W. Lapsley, (acting Lieut.-Col.) W. H. Cazaly, W. V. Coppinger, A. Spitteler, J. C. S. Oxley, (Bt. Lieut.-Col.) L. J. M. Deas, W. M. Houston, W. D. A. Keys, G. J. G. Young, J. Good, A. Chalmers, W. G. Hamilton, S. R. Godkin.

To be Lieutenant: (Temp. Capt.) Anil Chandra Chatterji (and retains the temporary rank of Captain).

The King has approved the grant of the temporary rank of Captain to the undermentioned: A. R. Upton, S. V. P. Pill.

The King has approved the resignation of Capt. J. J. Liston and the retirement of Lieut.-Col. W. H. Cazaly.

Medical News.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At the examination just concluded for the Single Licence Diploma of the College Mr. Susil Kumar Mukhopadhaya, L.M.S. Calcutta, passed the examination and was granted the diploma L.R.C.S. Edin.

At the recent Dental Examinations the following candidates passed the Final Examination and were granted the diploma L.D.S. R.C.S. Edin.:—

Ernest Joseph Millhouse, South Australia; Frederick Duncan Stephenson, Robert Haddow Mitchell, and Frederick James Duncan Cass, Edinburgh; Henry Augustus Taylor, Leith; George Thomas Paterson, Portobello; Alfred Charles Trotter, Simla, India; Arthur Brown, South Shields; and Joseph Nixon, Whitehaven.

ROYAL MEDICAL BENEVOLENT FUND GUILD.—The annual general meeting will be held to-day, Friday, March 19th, at 3 o'clock, at the Mansion House, when the Lord Mayor will preside, and the speakers will include Lady Barrett, M.D., Miss Lilian Braithwaite, and the Rev. H. R. L. Sheppard.

LONDON TEMPERANCE HOSPITAL.—The annual meeting will be held in the out-patient hall on Friday, March 26th, at 5 P.M., the Marquis of Lincolnshire in the chair, when addresses will be delivered by Sir Alfred Pearce Gould, Dr. J. Porter Parkinson, Mr. Arthur Evans, and others.

MIDDLESEX HOSPITAL MEDICAL SOCIETY.—The annual special meeting of this society will be held at the Middlesex Hospital on Friday, March 26th, at 8.30 P.M., when Sir Humphry Rolleston will deliver an address entitled "John Smith's Sacred Anatomy." Demonstrations will be given on the following subjects: Electro-therapeutics, electro-cardiography, and certain bacteriological subjects.

MEDICAL SOCIETY OF LONDON.—The 147th anniversary dinner, held at the Wharncliffe Rooms on Wednesday, March 17th, was not made the occasion of any important pronouncement of achievement or policy, but was entirely given up to good fellowship. Mr. V. Warren Low presided, and the guests included Sir George Makins, Sir Robert Hill, Sir John Goodwin, Sir Archibald Garrod, and Sir Humphry Rolleston. In the course of the evening the Fothergillian gold medal of the society was handed to Dr. Henry Head.

NO. 53 GENERAL HOSPITAL (B.E.F.).—The first reunion dinner of officers and nursing staff will take place on Thursday next, March 25th, at the Hotel Great Central, at 7.30 for 7.45 P.M. Those who wish to be present should communicate at once with: (officers) Lieutenant-Colonel E. M. Callender, C.B.E., 73, Sussex Gardens, London, W. 2.; (nurses) Miss M. S. Riddell, Principal Matron, T.F.N.S., 80, Pall Mall, S.W. 1.

CENTENARIANS.—The deaths of Miss Margaret Davison at Tunbridge Wells, aged 102, and of Miss Elizabeth McCusker, of Greenock, in her 108th year, have recently been reported.—Mr. Robert Lanyon, of Gorran, Cornwall, who celebrated the 100th anniversary of his birthday in November last, died on March 2nd.—Mrs. Nash, of Guildford, celebrated the 100th anniversary of her birthday on March 10th.

THE FEDERATION OF MEDICAL AND ALLIED SOCIETIES.—The Council of the Royal Society of Medicine agreed at its meeting on March 16th to officially appoint its representatives to the Federation.

ROYAL INSTITUTION.—Among the lectures to be given at the institution after Easter are two by Major G. W. C. Kaye, on Recent Advances in X Ray Work, and four by Professor Arthur Keith on British Ethnology. The Friday evening meetings will be resumed on April 16th, when Professor J. A. McClelland will deliver a discourse on Ions and Nuclei.

THE LATE Dr. S. FALKNER.—Dr. Sandbrook Falkner, who died recently at St. George's Hospital, aged 45, from septicæmia following a scratch on his thumb during an operation, was a well-known divisional surgeon to the Metropolitan Police in Fulham. He studied medicine at the London Hospital and obtained the qualification of the Conjoint Board in 1910. Dr. Falkner was radiologist to the Fulham School Clinic.

AT the last meeting of the Falmouth Borough Council, the resignation of Dr. A. Gregor, the medical officer of health, was accepted with much regret, and members of the Council stated they wished publicly to thank Dr. Gregor for his splendid services. The mayor added that they were in communication with the Ministry of Health in the hope of arranging to show their appreciation of Dr. Gregor's work in a tangible form.

Mr. Douglas H. W. Robson-Burrows, of Summerfield, Bournemouth, late a director of Messrs. Oppenheimer, Son and Co., was governor of the Royal Victoria and West Hants Hospital. He left an estate of the value of £18,544, the residue of which, exceeding £10,000, is bequeathed to the hospital.

PROVISIONAL ARTIFICIAL LEGS.—The Ministry of Pensions supply soldiers and pensioners who have suffered amputation of the leg with a provisional limb to supplement the permanent mechanical limbs that have been and are being supplied. The value of the provisional limb lies in its acting as a kind of "slipper" and as a reserve in case of accident to the mechanical limb. The Ministry is now announcing that if a pensioner has not received a second mechanical limb he is entitled to apply to his local War Pensions Committee for a provisional limb, when arrangements will be made with the nearest limb-fitting hospital, working in connexion with a Red Cross Provisional Limbs Depôt.

ROYAL MEDICAL BENEVOLENT FUND.—At the last meeting of the Committee, held on March 9th, 23 cases were considered, and £224 voted to 21 of the applicants. The following is a summary of some of the cases relieved:—

Daughter, aged 50, of M.R.C.S. Eng. who practised at Ryde and died in 1915. Her only income is £40 as a daily governess, and £10 from her sister. She has had a mental breakdown, and needs an entire change. She pays £9 2*s.* a year for one unfurnished room. Voted £5.—Daughter, aged 64, of F.R.C.S. Eng. who practised at Great Dunmow and died in 1887. Only income 10*s.* a week by gardening. Lives with an old aunt who provides for her. Asks for help owing to age, ill-health, and the high cost of living. Voted £12 in 12 instalments.—Widow, aged 40, of M.B. Lond. who practised at St. Helens and died in 1918. Was left unprovided for with three children, ages 5½, 4, and 2. Income £60 a year from dividends, and £65 from letting rooms. Pays £39 for rent and rates. Relieved twice, £20. Voted £16 in two instalments.—L.R.C.P. & S. Edin., aged 73, who practised at Dovercourt. He suffers from ill-health, and his practice has fallen off since the war. Has lost an annuity of £108 owing to the war. Receives about £105 from practice, and £10 an annuity. Has one daughter who helps at home, as his wife has very bad health. Rent £35. Relieved once, £10. Voted £10.—M.R.C.S. Eng., aged 53, who practised at Liverpool and abroad. Suffers from ill-health due to foreign climate, and has had to give up practice. Lives with his aunt. Receives £24 a year from friends, and earns about 6*s.* a week by his own efforts. Rent and rates £7 4*s.* 10*d.* Relieved seven times, £60. Voted £10 in two instalments.—Widow, aged 49, of M.B. Glasg. who practised in Nottingham and died in 1914. Takes in paying guests, by which she makes about £100 a year. Has two daughters, both at boarding school. Income spent in repairing and redecorating house, previous to letting it. Rent and rates £57. Relieved twice, £22. Voted £12.—Widow, aged 66, of M.D. Edin. who practised at Edinburgh and died in 1909. Was left with four children, one now married. Children pay £78, and she receives £12 from another charity. Pays £1 a week for lodgings, and 2*s.* 6*d.* for storing furniture. Relieved 11 times, £116. Voted £12 in 12 instalments.—Daughter, aged 56, of M.R.C.S. Eng. who practised in London and died in 1895. Was left entirely without means. She receives 17*s.* a year from a small sum invested and £21 from another charity. Pays £1 1*s.* a week for board and lodging. Suffers from ill-health and is unable to work. Relieved seven times, £87. Voted £12 in 12 instalments.—Daughter, aged 58, of M.R.C.S. Eng. who practised in London and died in 1880. She lives with widowed sister and her only income is £60 from other charities. Has very bad health. Relieved 10 times, £108. Voted £12 in 12 instalments.

Subscriptions should be sent to the honorary treasurer, Sir Charters J. Symonds, C.B., F.R.C.S., at 11, Chandos-street, Cavendish-square, London, W. 1.

UNIVERSITY OF BRISTOL.—The Victoria Rooms, Clifton, will be acquired by the University, and after necessary alterations be used as a common room or social club for the undergraduates.

THE Wellcome Historical Medical Museum, 54A, Wigmore-street, Cavendish-square, W., will be closed for cleaning and re-decoration from April 1st to 30th, inclusive.

DEVON MENTAL HOSPITAL.—The Mental Hospital Committee of the Devon County Council has decided to erect 24 houses, in blocks of six, for the use of asylum attendants. The cost of the scheme is estimated at about £14,855.

MAUDSLEY NEUROLOGICAL HOSPITAL: COURSE IN PSYCHOLOGICAL MEDICINE.—The lectures for Part I. of the diploma of Psychological Medicine will be given on Monday, Wednesday, and Friday afternoons, from 2.30–5.30 P.M., beginning on Wednesday, March 24th. The course includes 12 lectures on the anatomy of the nervous system by Sir Frederick Mott, with practical instruction and demonstrations (eight sessions of two hours each); 12 lectures on the physiology of the nervous system by Dr. F. L. Golla, with practical physiology (ten sessions); 10 lectures on psychology by Dr. J. P. Lowson, with practical work and demonstrations (eight sessions). The fees for the whole course of Part I. and Part II. are £15 15s., for either part separately £10 10s. Arrangements for Part II. will be announced later. Applications for admission should be addressed to the Asylums Officer, 13, Arundel-street, London, W.C. 2.

CENTRAL MIDWIVES BOARD FOR SCOTLAND.—At a meeting of the Scottish Central Midwives Board, held recently in Edinburgh, Sir J. Halliday Croom in the chair, the following penal cases were under consideration:—

(1) Failure to notify ophthalmia neonatorum, whereby the child's eyes were permanently impaired, and other breaches of the rules. Evidence that midwife had conducted cases for years without any untoward circumstance arising. Suspended from practice as a midwife for three months; the local supervising authority to report on her ability to take and record temperatures and pulses.

(2) Failure to notify still-birth and other breaches of the rules. Severely reprimanded.

(3) Convicted in the Police-court, Perth, of keeping an improper house, when she was fined 40s. Name removed from the roll.

(4) Having been in contact with a patient suffering from puerperal fever, failed to make the required notifications and to take the necessary precautions whereby other patients were affected. Name removed from the roll.

(5) Failure to notify ophthalmia neonatorum, and other breaches of the rules. No permanent disability to the eyes of the child. Chairman intimated that before proceeding with the extreme penalty of removing the name from the roll the nurse would be given an opportunity of proving amendment. Local supervising authority requested for a report at the end of three months.

Two other names were removed from the roll, one of a certified midwife who had been sentenced to six months' imprisonment for theft and fraud, the other of a certified midwife sentenced to 18 months' imprisonment for using instruments with intent to procure abortion.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.—Over 300 past and present students and friends of this school assembled on March 12th at the first reunion dinner held since before the war. In the absence of Miss Louisa Aldrich-Blake, the Dean, through a broken kneecap, Dr. May Thorne presided, and in an admirable speech describing the development of the school and hospital since the last reunion, outlined plans, including the formation of at least one clinical unit, for their further extension. She then gave a brief summary of the work done and the distinctions gained by members of the school in the various fields of the war. Finally, Dr. Thorne commended the appeal for funds—circulated as a leaflet—to the attention of the guests, and expressing her confidence of a generous response, proposed the toast of the Royal Free Hospital and the London School of Medicine for Women. In replying for the hospital, Dr. J. W. Carr spoke of the varied interests in the life of a modern student, and referred to one who was recently discovered simultaneously nursing her baby, smoking a cigarette, and reading a book on surgery. Miss Sybil Widdows, B.Sc., lecturer on inorganic chemistry at the school, responded for the London School of Medicine for Women. In a speech that aroused keen interest, she gave an account of some of the work of the students and of their loyalty to the hospital. The guests present included Sir Cooper Perry, Sir Thomas Barlow, and Sir Walter Fletcher, who responded on their behalf to the toast proposed by Lady Barrett. The health of Dr. Thorne, proposed by the Right Hon. F. D. Acland, M.P., chairman of the school, was also drunk with enthusiasm. The only drawback to an otherwise successful evening was the length of the formal proceedings which gave little time for the informal reunion of old friends, to which many past students had looked forward. The scheme outlined in the leaflet distributed to all present is the enlargement of the Royal Free Hospital to hold 450 beds. Of these 230 will be entirely free for poor patients and 220 will be allocated to persons of moderate means who can pay 3 guineas a week towards the expenses of their maintenance. The amount of money required is estimated at £500,000, to be distributed as follows: Hospital extension, £300,000; nurses' and service quarters, £50,000; equipment and maintenance charges, £100,000; school extension, £50,000. Any further information will be given by the honorary secretary, Dr. May Thorne, 8, Hunter-street, London, W.C. 1, while donations should be sent to the honorary treasurer of the appeal, Sir Francis Layland-Barratt, Bart., Royal Free Hospital, Gray's Inn-road, London, W.C. 1.

PSYCHO-NEUROLOGICAL SOCIETY.—At a committee meeting of the Lancaster Gate Medical Society (for the study of psychotherapy), held on March 1st, it was resolved that in future the society be known as the Psycho-Neurological Society, and that its object be "the study of psychological and neurological medicine." The officers for the year are: President, Dr. David Forsyth. Vice-President, Dr. W. A. Brend; honorary secretary, Dr. C. Worster-Drought; honorary treasurer, Dr. P. Bousfield. On Feb. 22nd a paper was read by Dr. Henry Head entitled "The Elements of the Psychoneuroses." An interesting discussion followed in which Drs. Forsyth, Brend, Worster. Drought, M. Culpin, R. Travers Smith, H. Linnell, and G. De Vine took part. On March 15th Dr. Travers Smith read a paper entitled "The Simulation of V.D.H." In the discussion that followed most of the speakers deplored the fact that the psychological basis of cases of "D.A.H." is so frequently overlooked.

URBAN VITAL STATISTICS.

(Week ended March 13th, 1920.)

English and Welsh Towns.—In the 96 English and Welsh towns, with an aggregate civil population estimated at nearly 18 million persons, the annual rate of mortality, which had been 15·6, 16·4, and 16·9 in the three preceding weeks, further rose to 17·1 per 1000. In London, with a population of nearly 4½ million persons, the annual death-rate was 17·2, or 0·2 per 1000 below that recorded in the previous week, while among the remaining towns the rates ranged from 6·5 in Eastbourne, 7·2 in Cambridge, and 7·7 in Hornsey to 26·2 in Middlesbrough, 26·7 in South Shields, and 29 3 in Barnsley. The principal epidemic diseases caused 467 deaths, which corresponded to an annual rate of 1·4 per 1000, and comprised 199 from measles, 108 from whooping-cough, 79 from diphtheria, 49 from infantile diarrhœa, 25 from scarlet fever, 5 from enteric fever, and 2 from small-pox. Measles caused a death-rate of 2·6 in Lincoln, Grimsby and St. Helens, 3·0 in Barnsley, 3·2 in Wakefield, and 5·2 in Gloucester; whooping-cough of 5·2 in Gloucester; and diphtheria of 3·1 in Gloucester. The two fatal cases of small-pox belonged to the metropolitan borough of Poplar. The deaths from influenza, which had increased from 66 to 196 in the six preceding weeks, further rose to 230, and included 57 in London, 32 in Birmingham, 17 in Liverpool, 11 in Plymouth, and 7 each in Dudley, Manchester, and Leeds. There were 2182 cases of scarlet fever, 2045 of diphtheria, and 7 of small-pox under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, against 2255, 2006, and 7 respectively at the end of the previous week. The causes of 43 deaths in the 96 towns were uncertified, of which 12 were registered in Birmingham, 4 in Liverpool, and 3 each in London and South Shields.

Scotch Towns.—In the 16 largest Scotch towns, with an aggregate population estimated at nearly 2½ million persons, the annual rate of mortality, which had been 15·7 in each of the two preceding weeks, rose to 16·0 per 1000. The 317 deaths in Glasgow corresponded to an annual rate of 14·9 per 1000, and included 7 each from measles and influenza, 4 from diphtheria, 2 from whooping-cough, and 1 each from small-pox, scarlet fever, and infantile diarrhœa. The 114 deaths in Edinburgh were equal to a rate of 17·4 per 1000, and included 5 from measles, 2 each from diphtheria and influenza, and 1 each from scarlet fever and infantile diarrhœa.

Irish Towns.—The 159 deaths in Dublin corresponded to an annual rate of 20·0, or 0·7 per 1000 below that recorded in the previous week, and included 6 from whooping-cough and 3 each from measles and infantile diarrhœa. The 225 deaths in Belfast were equal to a rate of 28·4 per 1000, and included 23 from influenza, 7 from measles, 4 from scarlet fever, 3 from whooping-cough, 2 each from enteric fever and diphtheria, and 1 from infantile diarrhœa.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 10TH.

Treatment Centres for Venereal Disease.

Mr. JOHN DAVISON asked the Minister of Health whether he had arranged for the keeping of records regarding the treatment centres for venereal diseases established partly or wholly at the public expense; whether he could state the number of cases that had been dealt with for the first time at such centres; and what had been the expenditure in connexion with such centres from national and local funds respectively for each year since their establishment.—Dr. ADDISON replied: The answer to the first part of the question is in the affirmative. The number of cases dealt with for the first time at these centres between Jan. 1st, 1917, when the first treatment centres were opened, and Dec. 31st, 1919, is approximately 175,000. The approximate expenditure of local authorities on their schemes for the diagnosis and treatment of venereal diseases during the years ended March 31st, 1917, 1918, and 1919 amounted to £18,000, £116,000, and £216,000 respectively. The estimated expenditure during the current financial year is £314,000. Of this expenditure 75 per cent. is borne by national funds and 25 per cent. by local funds.

Institutional Provision for Tuberculous Persons.

Lieutenant-Colonel FREMANTLE asked the Minister of Health whether the legislation necessary before he could decide the future utilisation of Poor-law infirmaries was to be expected this session; and, if not, whether he would give such definite advice to boards of guardians as would enable them to make the institutional provision urgently required for tuberculous persons without incurring expenditure on accommodation which might be unsuitable for its ultimate purpose.—Dr. ADDISON replied: I am not yet in a position to make any statement in regard to the first part of the question. As regards the latter part of the question, it is not the policy of the Government to encourage boards of guardians to make additional provision for tuberculous persons. I am pressing upon the public health authorities the need for providing further institutional accommodation for these cases with the aid of substantial financial assistance from the Exchequer.

Lieutenant-Colonel FREMANTLE: Does not that mean a large amount of institutional provision that may be superfluous when there are Poor-law institutions available for the purpose and suitable?—Dr. ADDISON: I do not think it does. As a matter of fact, we are several thousand beds short at the present time.

Arsenical Treatment of Syphilis.

Mr. TYSON WILSON asked the Secretary for War whether any inquests were held in respect of any of the deaths of soldiers after arsenical treatment for syphilis, referred to in the paper read by Brevet-Colonel L. W. Harrison at the meeting of the British Medical Association in April last; whether the deaths mentioned in that paper comprised all the deaths of that description occurring in the British Army during the years of the war; and if not, would he supply a complete table of figures showing how many such deaths occurred at each of the Colonial and Imperial venereal hospitals in this country and abroad.—Sir A. WILLIAMSON: I am obtaining information regarding the first part of the honourable Member's question. It is not possible to give a complete answer to the remainder of the question, as the records of many of the hospitals concerned have been, or are being, forwarded to the Medical Research Committee for compiling the medical history and medical statistics of the war.

THURSDAY, MARCH 11TH.

Pensions and Gratuities in the Massage Service.

Major HILLS asked the Pensions Minister whether his attention had been directed to the fact that members of the Massage Service received no bonus, gratuity, or pension; whether members of this service had worked all through the war; and whether he would secure for them either a pension or a gratuity or both.—Sir L. WORTHINGTON-EVANS replied: The Ministry of Pensions Massage Service has in the main been recruited from the Military Massage Service, and the personnel have worked for varying periods during the war. In common with the rest of the temporary staff of the Ministry, the Massage Service are not entitled to bonus, gratuity, or pension, and there would appear to be no ground for their being accorded exceptional treatment in this respect.

Medical Boards and Disability Pensions.

Captain LOSEBY asked the Pensions Minister if he was aware that medical boards still frequently refused to inform soldiers immediately after examination of the degree of disability at which they had been assessed; and if he would consider the advisability of issuing emphatic instructions upon this subject.—Sir L. WORTHINGTON-EVANS replied: I am sending the honourable and gallant Member a copy of an Office Instruction, issued in December of last year, from which he will see that explicit directions have been issued to medical boards in this matter. I shall be glad to have particulars of any cases where these directions are not being observed.

Captain LOSEBY: Is the right honourable gentleman aware that this omission is particularly striking in the case of disabled soldiers wounded prior to 1914 who are being re-assessed?—Sir L. WORTHINGTON-EVANS: I have not had my attention called to any differentiation between pre-1914 and post-1914 men, but I will see if there is any such differentiation. There is no instruction.

Small-pox in Poplar.

Mr. WILLIAM THORNE asked the President of the Board of Education whether he was aware that at least 300 school children had been taken to the Poplar cleansing station at Bromley-by-Bow since the outbreak of small-pox in that district on Feb. 14th; whether the door of this cleansing station opened directly on to the infected side of the disinfecting station; whether the children's clothing was taken through this door; whether contacts since removed to hospital suffering from small-pox were brought to this station; whether a man working at the station had been removed suffering from small-pox; what action he proposed to take should any of the children sent to this station for cleansing purposes develop small-pox; whether he would see that the parents of such children were fully compensated; and whether he would arrange that any children needing cleansing should be sent to other stations while small-pox infection was likely to prevail near the station at Bromley-by-Bow.—Dr. ADDISON (Minister of Health) replied: The answer to the first part of the question is in the affirmative. As regards the remainder of the question, I am advised that the facts are as follows: The cleansing station is within the same ground as the disinfecting station, but the children who are taken to the cleansing station do not enter or leave the cleansing station by the door opening into the large yard, which contains also the entrance to the infected side of the disinfecting station. The children's clothing is, of course, taken through the door to the disinfecting station. The contacts with cases of small-pox are brought for necessary disinfection to a shelter which in within the same ground as the cleansing station, but is situated at some considerable distance from that station. The man referred to in the question was the driver of the disinfecting van, whose duties took him to the home of a person who had been removed suffering from small-pox. The man was aware of that fact, but nevertheless he refused to be vaccinated. I have no authority to direct the payment of any compensation to the parents of children who may contract small-pox, nor do I consider it necessary at present to close the station to children. But several cases of small-pox have recently occurred in Poplar, and it is obviously the duty of parents to see that their children are protected by vaccination.

Veterinary Surgeons Bill.

Sir WATSON CHEYNE moved the second reading of the Veterinary Surgeons Act (1881) Amendment Bill. He said that it was a very short Bill, produced on behalf of the Royal College of Veterinary Surgeons, the only College of its kind in the kingdom. There was an average of 70 or 80 admissions to the College every year, and the income was not anything like sufficient to pay expenses. The College was only able to carry on by voluntary contributions. There were 2300 members on the register, and 1100 of these gave one guinea a year. The proposal of the Bill was that there should not be merely an admission fee, but also an annual fee of one guinea. The Bill would also prevent unqualified men practising under the name of a veterinary dispensary or hospital.—Brigadier-General COLVIN moved the rejection of the Bill. The unregistered practitioners, he said, had very large practices throughout the country, and without their assistance the farmers and other owners of stock could not possibly get on.—Mr. JODRELL seconded the rejection of the Bill. It was quite true, he said, that the measure in itself was reasonable and logical and had a great deal to commend it to everyone interested in science and in the scientific advancement of veterinary work throughout the country. Still, at the back of the Bill there was a suggestion of compulsion being put upon a large class of men to join in the working of a College which they were incapable of doing for want of previous education.—Sir H. CRAIK said there was no desire to prosecute unqualified men or those who occasionally employed their assistance; but it was desired that ill-equipped practitioners should be stopped from acting independently.—On a division the second reading of the Bill was agreed to by 106 votes to 51.

FRIDAY, MARCH 12TH.

Aid for the Blind.

Mr. TILLETT, in moving the second reading of the Blind (Education, Employment, and Maintenance) Bill, said that the object of the measure was to provide for the technical

education of the blind by the establishment and equipment of technical schools where necessary, or by contributions to existing schools and institutions; for the employment of the blind by the establishment and equipment of workshops where necessary, or by contributions to existing institutions providing work for the blind, and for grants to augment the wages earned by persons so employed; for the expenses of the blind in institutions and hostels while under technical instruction, for their employment and maintenance away from workshops, and for the maintenance of blind persons incapacitated from earning a livelihood. There were in the United Kingdom some 30,000 dependent blind persons, of whom 10,000 were supported by Poor-law authorities, 7000 were more or less industrially employed, and 2000 were directly employed industrially. Their normal efficiency was between 35 and 50 per cent. of the average. Forty per cent. of blindness occurred after the age of 35. If the report on the C 3 nation were analysed it would show that blindness and defective sight were a great danger to the nation. This Bill would deal with the preventive, curative, and remedial sides of the question. The report of the Commission on Venereal Disease showed that we had a very serious situation to face. Twenty-five per cent. of blindness was due to gonorrhœa in the mother. He thanked the Government, the Ministry of Health, and the voluntary institutions for all they had done. Yet, looking back, he thought, as a race, we had done very little for the blind.

Dr. ADDISON, speaking for the Government, asked the House to deal with this question as a whole. They must not only deal with effects, but also with causes. He found that a very large number of the cases in the London County Council blind schools were due to preventable conditions—he referred to venereal disease in one or other of its forms. It was no exaggeration to say that while one-fifth of the blind were blind within six months of birth nearly all those cases could have been prevented. He was not satisfied that they had yet covered the ground properly in regard to the prevention of blindness. He would therefore adopt the suggestion that there should be a more methodical and comprehensive inquiry of a scientific character into the causes which led to blindness. The Board of Education was now pressing local authorities to extend the facilities for training by giving assistance to private and voluntary organisations. Parliament must take care that the interests of the blind and the sympathies of the public were not exploited by those who were not worthy of support. The Government would therefore propose to require the registration of agencies seeking support of a voluntary character for the blind. The Government were prepared to support proposals enabling county councils, borough councils, and possibly other bodies to contribute towards the provision and maintenance of workshops, hostels, and homes for the blind. It was clear to him, after careful inquiry, that blind persons after the age of 50 could not be taught anything, and in respect to that class the Government proposed to adopt a special class of relief, and to use for it the same machinery as in regard to Old-age Pensions. Between the ages of 50 and 70 blind persons would receive, subject to the same disqualifications as to income and so forth, the same benefits and weekly allowances as old-age pensioners. That would really meet the cases of 46 per cent. of the blind who were indigent and too old to be taught. He suggested that the House should give the Bill a second reading, and that he should consult those who were specially interested in the subject so that the Bill might either be remodelled or another introduced to give effect to the Government proposals.—The second reading of the Bill was carried unanimously.

MONDAY, MARCH 15TH.

Deficiency of Officers in the Indian Medical Service.

Colonel YATE asked the Secretary for India if he would state what was the present deficiency of officers in the Indian Medical Service; and how many candidates had been forthcoming in the past year.—Mr. FISHER (Minister of Education) replied: In a report received from the Government of India in July last they estimated that 166 officers were required to bring the Indian Medical Service up to the strength required by present conditions.

Sanatoriums for Uncertifiable Mental Cases.

Mr. RENDALL asked the Minister of Health what steps he intended to take in regard to the provision of sanatoriums for uncertifiable mental cases; and whether for the encouragement of voluntary patients such homes should be kept on a hospital footing, that was free from detention and wholly unconnected with lunacy administration, so as to prevent their being regarded as half-way houses to asylums.—Dr. ADDISON replied: Any scheme on the lines of my honourable friend's suggestion, with which I am entirely in sympathy, would require legislation. The question is under consideration, but I am not yet in a position to state when the necessary legislation will be introduced.

Illness on the s.s. "Dufferin."

Major MACKENZIE WOOD asked the President of the Board of Trade whether the steamship *Dufferin*, which sailed recently from Southampton to Bombay, was in an insanitary and crowded condition; whether a serious outbreak of illness, affecting 500 persons, occurred on board; and what action he proposed to take in the matter.—Mr. FISHER replied: The answer to the first part of the question is in the negative. The ship was thoroughly disinfected by the Clayton process before sailing, and the passengers were berthed on the lines adopted on passenger steamers sailing to India. In view of the shortage it is not possible to give passengers as much space as in normal conditions. I understand that a certain amount of sickness occurred during the latter part of the voyage. There is no reason for thinking that the outbreak was serious, but inquiry will be made of the Government of India.

Rabies and the Muzzling Order.

Captain TUDOR-REES asked the Parliamentary Secretary to the Ministry of Agriculture whether there were any cases of rabies now in the country; what counties were still subject to the Muzzling Order; and when he expected to be able to cancel that Order.—Sir A. BOSCAWEN replied: The last case of rabies occurred in Surrey on Feb. 18th. The Muzzling Orders are at present in force in six different parts of the country. Owing to the abnormally long incubation period which sometimes occurs in rabies it is not considered safe to free a muzzling area within a period of six to eight months from the date of the confirmation of the last case.

Tuberculosis Order, 1913.

Lieutenant-Colonel FREMANTLE asked the Parliamentary Secretary to the Ministry of Agriculture if he would state on what date the Tuberculosis Order of 1913 would come into force; whether whole-time veterinary surgeons were to be appointed to carry on the required inspections; and whether he was acting in close coöperation with the Ministry of Health in the serious intention of reducing the prevalence of tuberculosis, so far as might be possible by Government measures.—Sir A. BOSCAWEN replied: It is anticipated that the Tuberculosis Order, either in its present form or slightly amended, will come into operation at the same time as the Milk and Dairies Act. The question of employing whole-time veterinary surgeons is under consideration, but the matter is one which presents serious difficulties. The Ministries of Health and Agriculture are acting in close coöperation in this matter, and the possibility of introducing a system whereby herds may be guaranteed free from tuberculosis is under consideration by my department.

Compensation for Small-pox.

Mr. JOHN JONES asked the Minister of Health whether he was aware that there had been an outbreak of small-pox in the borough of Poplar and in other parts of East London; and whether, in order to assist in preventing the spread of such disease, he would secure the amendment of the Workmen's Compensation Act or at once introduce legislation to enable a person contracting an infectious or contagious disease through the neglect of any individual, body of persons, or Government department to obtain compensation on similar lines to that which enabled a workman to receive compensation for contracting a disease in the course of his employment.—Dr. ADDISON replied: The answer to the first part of the question is in the affirmative. All practical steps are being taken to prevent the spread of the disease, but I do not see how the course suggested by the honourable Member would assist in that direction, and I could not undertake to introduce legislation on the lines suggested by the honourable Member.

TUESDAY, MARCH 16TH.

Medical Officers in Mesopotamia.

Sir WATSON CHEYNE asked the Secretary for War if he had been able to make any further arrangements to relieve the medical officers of the Royal Army Medical Corps in Mesopotamia (Special Reserve and Territorial Force) who had been there for some years; if he had satisfied himself that all these officers were required; if he was aware that at one centre, where five medical officers and five subordinates were stationed, it was stated that the medical work of each officer during the last six months had averaged ten minutes per day, and that for the last seven weeks prior to Jan. 24th they had not received a single patient; and whether, considering the great injury to their health and their future prospects resulting from their prolonged residence in Mesopotamia, he would use every endeavour to secure their transfer elsewhere.—Mr. CHURCHILL replied: Every endeavour continues to be made to relieve medical officers of the Special Reserve and Territorial Force serving in Mesopotamia who, on account of age, length of service in the East, and personal hardship, are considered by the General Officer Commanding to be eligible for release. The establishments are being reduced to the greatest possible extent, having regard to the

care of the sick and the protection of the garrison; and regular Royal Army Medical Corps officers are being sent out as far as the available resources and the heavy demands to be met elsewhere permit. I am not aware of the particular cases mentioned, but if details are supplied I will obtain a full report. At the same time, however, I would point out that in Mesopotamia and Persia isolated bodies of troops are stationed, and these require to be provided with medical personnel, as the distances preclude the despatch of medical officers at short notice should their services at any time be urgently required.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ABRAHAMS, A., M.D. Camb., M.R.C.P. Lond., has been appointed Assistant Physician to Westminster Hospital.

FOURACRE, S. F., M.B., B.S. Lond., Honorary Anæsthetist to Charing Cross Hospital and to the National Dental Hospital.

HEATH, F. H. R., L.R.C.P., M.R.C.S., Honorary Radiologist to the Dorset County Hospital, Dorchester.

HIGGINS, T. TWISTINGTON, F.R.C.S., Surgeon (with charge of Out-patients) at the Great Northern Central Hospital, Holloway.

KRAUSE, R. A., M.D., Ch.B. Edin., Chief School Medical Officer for the County of Fife.

RAFFAN, J., M.D. Aberd., F.R.C.S. Edin., Honorary Surgeon to the Huddersfield Royal Infirmary.

SMITH, H. GORDON, M.B., B.S. Lond., D.P.H. Camb., Medical Officer of Health to the Borough of Shrewsbury.

STEWART, P., M.B., C.M. Glasg., Certifying Surgeon under the Factory and Workshop Acts for Kirkliston.

SUNDELL, C. E., M.D. Lond., M.R.C.P., Physician in charge of the Children's Department at the Prince of Wales's General Hospital, London, N.

Vacancies.

For further information refer to the advertisement columns.

Ayr County Hospital.—Res. H.S. £120.
Barnsley, Beckett Hospital.—Jun. H.S. £150.
Battersea General Hospital, Battersea Park, S.W.—Res. M.O. £250.
Belgrave Hospital for Children, Clapham-road, S.W.—H.P. and H.S. £100 and £75 respectively.
Birkenhead Borough Hospital.—Sen. and Jun. H.S.'s. £200 and £170.
Birmingham, City Sanatorium, Yardley-road, Small Heath.—Third Asst. Res. M.O. £350.
Birmingham General Hospital.—H.S. £100.
Blackburn County Borough.—M.O.H. £1000.
Bradford Children's Hospital.—H.S. £180.
Bradford City.—Medical Woman for Ante-natal Work. £500.
Bradford Royal Infirmary.—Two H.S.'s. £200 each.
Brentwood Mental Hospital.—Med. Supt. £1000.
Brighton County Borough Sanatorium.—Res. M.O. £350.
British Guiana.—Asst. M.O. £400.
Burnley, Victoria Hospital—H.S. £250.
Cancer Hospital, Fulham-road, S.W.—Hon. Dent. S. 25 gs. Also Two H.S.'s. £150 each.
Cardiff, King Edward VII. Welsh National Memorial Association—Tuberc. P. £600.
Carlisle City.—Female Asst. M.O. £500.
Central London Ophthalmic Hospital, Judd-street, W.C.—H.S. £50.
Chelmsford, Administrative County of Essex.—Tuberc. O. £500.
City of London Hospital for Diseases of the Chest, Victoria Park, E.—Tuberc. O. £600.
Denbigh, North Wales Sanatorium,—Asst. Res. M.O. £400.
Derby, Derbyshire Royal Infirmary.—H.S. £200. Also Oph. H.S. £200.
Derbyshire Education Committee.—Sch. Dentist. £450.
Dorchester, Dorset County Council Education Committee.—School Dentists. £400.
Dover, Royal Victoria Hospital.—H.S. £180.
Eastbourne, East Sussex County Mental Hospital.—Locum Tenens Asst. M.O. 7 guineas a week.
East London Hospital for Children and Dispensary for Women, Shadwell, E.—Cas. O. £120. Also H.S. £125.
Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—Female Clin. Assts.
Evelina Hospital for Children, Southwark, S.E.—H.S. £160.
Exeter City.—Asst. M.O.H. and Asst. Sch. M.O. £500.
Glasgow Western Infirmary.—Lecturer on Electrical Diagnosis and Therapeutics.
Gloucester, Gloucestershire Royal Infirmary and Eye Institution.—H.P and Asst. H.S. £175 and £150 respectively.
Gravesend Hospital.—H.S. £200.
Great Northern Central Hospital, Holloway, N.—H.P. £150.
Greenwich, Metropolitan Borough.—Asst. M.O.H. and M.O. for Tuberculosis Dispensary. £700.
Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—Cas. M.O. £150. Also Hon. Dent. S.
Hospital for Sick Children, Great Ormond-street, London, W.C.—Res. Med. Supt. £200. Also Asst. Cas. M.O., H.P., and H.S. £50 each.
Hospital for Women, Soho-square, W.—Res. M.O. £100.
Leamington, Warwickshire and Coventry Joint Committee for Tuberculosis.—Asst. Tuberc. O. £500.
Leeds Public Dispensary.—Res. M.O. £200.
Leeds Tuberculosis Hospital, Killingbeck.—Med. Supt. £500.
Liverpool, City Infectious Hospitals.—Asst. Res. M.O. £250.
Liverpool Education Committee.—Two Asst. Sch. M.O.'s. £350.
Liverpool, Stanley Hospital.—Two H.S.'s. £150.
Liverpool University, Faculty of Medicine.—Lecturer in Histology and Assoc. Prof. in Cytology.
Liverpool, Walton Institution, Rice-lane.—Asst. Res. M.O. £280 + £72.
Loughborough and District General Hospital and Dispensary.—Res. H.S. £200.
Macclesfield County Asylum.—Asst. M.O. £350.
Macclesfield General Infirmary. Res. H.S. £200.
Manchester Children's Hospital, Pendlebury, near Manchester.—Res. M.O. £150.
Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road.—Hon. P.
Middlesbrough, North Ormesby Hospital.—Asst. H.S. £175.
Ministry of Health, Whitehall, S.W.—M.O.'s. £1000.
Monmouthshire County Council.—Pathol. and Bacteriol. £750.
National Hospital for Diseases of the Heart, Westmoreland-street, W.—Out-patient M.O. £90.
National Hospital for the Paralysed and Epileptic, Queen-square, W.C.—H.P. £150. Also Hon. Gynæcologist.
Newark Hospital and Dispensary.—Res. H.S. £200.
Newcastle-upon-Tyne, Durham University College of Medicine.—Curator of the Museum. £250.
Oldham County Borough.—Asst. M.O. £500.
Perth Royal Infirmary.—H.S. 6 guineas per week.
Peterborough Infirmary.—Hon. P., Hon. Asst. P., and Hon. Asst. S.
Plymouth, South Devon and East Cornwall Hospital.—H.S. £200.
Prince of Wales's General Hospital, Tottenham, N.—H.P. and H.S. £200 each. Also Jun. H.P. and Jun. H.S. £120 each.
Queen Mary's Hospital for East End, Stratford, E.—H.P.
Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—H.P. £100.
Reading, Royal Berkshire Hospital.—H.P. and Second H.S. £200 each.
Redhill, Surrey, Royal Earlswood Institution.—Asst. M.O. £400.
Royal Dental Hospital of London, Leicester-square, W.—Asst. Dent. S.
Royal Free Hospital, Gray's Inn-road, W.C.—Cas. O. £100.
Royal Institute of Public Health, 37, Russell-square, W.C.—Senior Demonstrator of Bacteriology.
Royal National Orthopædic Hospital, 234, Great Portland-street, W.—H.S. £200.
Royal Westminster Ophthalmic Hospital, King William-street, West Strand, W.C.—Asst. H.S.
St. Mary's Hospital for Women and Children, Plaistow, E.—S. £100.
St. Thomas's Hospital.—Two Sen. Asst. M.O.'s. £600. Also Two Jun. Asst. M.O.'s. £350. Also Bacteriol. £600.
Salford Royal Hospital.—Res. S.O. £250. H.S. £150.
Scarborough Hospital and Dispensary.—Two H.S.'s £150.
Sheffield Royal Infirmary.—Hon. Radiologist. £100.
Shirlett, near Much Wenlock, King Edward VII. Memorial Sanatorium.—Res. Med. Supt. £450.
Shrewsbury, Royal Salop Infirmary.—H.S. £250.
South London Hospital for Women, South Side, Clapham Common, S.W.—Asst. P.
Stamford, Rutland, and General Infirmary, Stamford.—H.S. £200.
Stoke-on-Trent, North Staffordshire Infirmary.—Two H.S.'s. £200 each.
Stoke-upon-Trent Union.—Res. M.O. £600.
Sunderland Royal Infirmary —Jun. H.S. £200.
Sunderland, Royal Infirmary, Children's Hospital.—Female Jun. Res. M.O. £150.
Surrey County Council.—Asst. M.O.H. £600.
Throat Hospital, Golden-square, W.—Surgical Registrar.
University of London.—External Examiners.
Wakefield General Hospital.—Jun. H.S. £150.
Wallasey, Victoria Central Hospital and Wallasey Dispensary.—H.S. £250.
Woolwich Tuberculosis Dispensary, Maxey-road, Plumstead, S.E.—Asst. Tuberc. O. £500.
Wolverhampton and Midland Counties Eye Infirmary.—H.S. £200.
Wolverhampton and Staffordshire General Hospital.—H.S. £200.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Castle Acre and at Consett.

THE Home Secretary gives notice that in consequence of the resignation of Mr. H. S. Walker, Specialist Medical Referee under the Workmen's Compensation Act, 1906, for ophthalmic cases in County Court Circuits Nos. 12 and 14, the appointment held by him is vacant. Applications for the post should be addressed to the Private Secretary, Home Office, and should reach him not later than April 3rd, 1920.

Births, Marriages, and Deaths.

BIRTHS.

BELLINGHAM-SMITH.—On March 9th, at 74, Kensington Park-road, W., the wife of Eric Bellingham-Smith, M.D., M.R.C.P. Lond., of a son.

BURTON.—On March 15th, at Dullatur, Camberley, the wife of Brevet Lieutenant-Colonel Colin Burton, D.S.O., R.A.S.C., of a son.

CLAPHAM.—On March 10th, at Madeley House, Park-road, Peterborough, the wife of Harold Clapham, M.R.C.S., L.R.C.P., of a daughter.

REINHOLD.—On March 6th, at Cairo, the wife of Major C. H. Reinhold, M.C., I.M.S., of a son.

DEATHS.

CHRONNELL.—On March 10th, at Hindley, James Chronnell, M.R.C.S., L.R.C.P.

CUFFEY.—On Feb. 25th, at Port Said, Egypt, Edward Cuffey, M.B., O.B.E.

DOCKRELL.—On March 15th, Benjamin Morgan Dockrell, M.A., M.D., M.A.O., Senior Physician, St. John's Hospital, Leicester-square, in his 61st year.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE 1, Wimpole-street, W.

Tuesday, March 23rd.

SOCIAL EVENING: at 8.30 P.M.
Dr. G. Murray Levick will show some of his famous Penguin Slides taken in the Antarctic during the Scott Expedition.

The Library will be open, and various objects of interest will be exhibited. Music and light refreshments. The President, Sir Humphry Rolleston, and Lady Rolleston will receive guests at 8.30 P.M. It is hoped there will be a good attendance of Fellows and their friends, who will be cordially welcomed.

MEETINGS OF SECTIONS.

Monday, March 22nd.

ODONTOLOGY (Hon. Secretaries—G. Paton Pollitt, W. Kelsey Fry, J. Howard Mummery): at 8 P.M.
Casual Communications will be read by—
Mr. Frank Coleman, Mr. F. H. Doubleday, Mr. Montagu Hopson, Mr. S. F. St. J. Steadman, Mr. Harry Stobie, and Mr. Watson Turner.
Short Paper: Mr. Gerald B. Ash: Pyorrhœa.

Tuesday, March 23rd.

MEDICINE (Hon. Secretaries—W. Cecil Bosanquet, J. H. Thursfield): at 5.30 P.M.
Dr. Mackenzie Wallis will introduce the subject of "Non-nephritic Albuminuria," followed by Dr. Batty Shaw and Dr. Tyson.

Friday, March 26th.

EPIDEMIOLOGY AND STATE MEDICINE (Hon. Secretaries—William Butler, Major Greenwood): at 8.30 P.M.
Paper: Dr. S. Monckton-Copeman, F.R.S.: Small-pox.
Those Members of the Section who wish to attend the dinner at the Welbeck Palace Hotel, at 7 P.M., are requested to notify Dr. Major Greenwood, Lister Institute, Chelsea Gardens, S.W.1, not later than March 24th.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY, March 22nd.—8.30 P.M., Discussion on the Re-education of the Amputated, introduced by Mr. Muirhead Little.

CHILD STUDY SOCIETY, LONDON, at the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W.
THURSDAY, March 25th.—6 P.M., Mrs. E. S. Chesser, M.D.: Adolescence and the Continuation Schools.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION, 11, Chandos-street, Cavendish-square, W.
FRIDAY, March 26th.—8 P.M., Paper: Dr. G. H. Lock: Care of Minor Ailments in School Children. A discussion will follow.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.
TUESDAY, March 23rd, AND THURSDAY.—5 P.M., Lumleian Lectures:—Sir J. Rose Bradford, K.C.M.G., C.B.: The Clinical Experiences of a Physician during the Campaign in France and Flanders 1914–1919. (Lectures II. and III.)

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL (UNIVERSITY OF LONDON).
A Course of Post-Graduate Lectures on Syphilis is being given by various members of the staff of King's College Hospital during the present year.
FRIDAY, March 26th.—9.15 P.M., Mr. H. Playfair: Syphilis in Antenatal and Obstetric Practice.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, POST-GRADUATE COURSE, Westmoreland-street, W.
MONDAY, March 22nd.—11 A.M., Out-patients: Dr. Goodall. 2 P.M. In-patients: Dr. Moon.
TUESDAY.—2 P.M., Out-patients: Dr. R. Wells. 3 P.M., In-patients: Dr. Gibbes.
WEDNESDAY.—2 P.M., Out-patients: Dr. Moon. 5.30 P.M., Lecture:—Dr. Moon: Heart Affections and the Labour Market.
THURSDAY.—10 A.M., In-patients: Dr. Hamill: 2 P.M., Out-patients: Dr. Price.
FRIDAY.—2 P.M., Out-patients: Dr. Gibbes. 2.30 P.M., In-patients: Dr. Wells.
SATURDAY.—10.30 A.M., In-patients: Dr. Hamill.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
TUESDAY, March 23rd.—2 P.M., Demonstration:—Dr. F. G. Crookshank: Cases illustrating Joint Disease in Children. 4.30 P.M., Lecture:—Mr. C. H. Hayton: Inflammatory Diseases of the Middle Ear.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, W.C.1.
MEDICAL SCHOOL.
MONDAY, March 22nd.—2–3.30 P.M., Out-patient Clinic: Dr. Collier. 3.30 P.M., Ward Cases: Dr. Aldren Turner.
TUESDAY, March 23rd.—2–3.30 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Dr. Tooth: Encephalitis.
WEDNESDAY, March 24th.—2 P.M., Mr. Elmquist: Demonstration of Fraenkel's Exercises. 3.30 P.M., Dr. Collier: Aphasia and Apraxia. (II.)
THURSDAY, March 25th.—2–3.30 P.M., Out-patient Clinic: Dr. Farquhar Buzzard. 3.30 P.M., Ward Cases: Dr. Saunders.
FRIDAY, March 26th.—2–3.30 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Mr. Elmquist: Demonstration of Fraenkel's Exercises.
SATURDAY, March 27th.—9 A.M., Surgical Operations.
Fee for Post-Graduate Course £7 7s. C. M. HINDS HOWELL, Dean.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
SATURDAY, March 20th.—10 A.M., Mr. Banks Davis: Operations of the Throat, Nose and Ear.
MONDAY, March 22nd.—12.15 P.M., Mr. Burnford: Pathological Demonstration.
TUESDAY.—5 P.M., Mr. T. Gray: Congenital Hypertrophic Stenosis of the Pylorus.
WEDNESDAY.—5 P.M., Mr. Gibb: Glaucoma.
THURSDAY.—5 P.M., Mr. Baldwin: Practical Surgery.
FRIDAY.—5 P.M., Special Lecture:—Sir W. Arbuthnot Lane, Bart.: Intestinal Stasis.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.
WEDNESDAY, March 24th.—4.30 P.M., Dr. Burrell: Vital Capacity in Pulmonary Tuberculosis.

CHADWICK PUBLIC LECTURES, in the Lecture Room, Royal Society of Arts, John-street, Adelphi, W.C.
MONDAY, March 22nd.—5.15 P.M., Lecture:—General Sir John Goodwin, K.C.B., C.M.G., D.S.O.: Military Hygiene in Peace and War. III., The Future of Army Hygiene (Its Relation to the Hygiene of the Civil Community). (Illustrated by lantern slides.)

UNIVERSITY OF SHEFFIELD—FACULTY OF MEDICINE POST-GRADUATE DEMONSTRATIONS, at Sheffield Royal Hospital.
MONDAY, March 22nd.—3.30 P.M., Dr. Nutt: Ionic Medication: Radium Therapy, &c.
TUESDAY.—4 P.M., Dr. Hay: Ophthalmic Operations.
WEDNESDAY.—3.30 P.M., Dr. Wilkinson: Cerebral Complications.
THURSDAY.—3.30 P.M., Dr. Skinner: Methods of Treatment of Ear and Nose Suppurations.
FRIDAY.—4 P.M., Dr. Hay: Common Mistakes in Diagnosis and Treatment of Eye Diseases.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.
TUESDAY, March 23rd.—4.30 P.M., Mr. C. Roberts: Chronic Inflammations and Cysts of the Breast.

SALFORD ROYAL HOSPITAL AND ANCOATS HOSPITAL POST-GRADUATE DEMONSTRATIONS, at the two Hospitals alternately.
THURSDAY, March 25th.—4.30 P.M., Mr. Platt: Demonstrations on the Principles of the Treatment of Fractures. (At the Ancoats Hospital.)

BRIGHTON DIVISION OF THE BRITISH MEDICAL ASSOCIATION, at the Children's Hospital.
THURSDAY, March 25th.—4 P.M., Clinical Demonstration.

Communications, Letters, &c., to the Editor have been received from—

A.—Dr. G. G. Alderson, Kenilworth.
B.—Major S. T. Beggs, R.A.M.C.; Sir J. Byers, Belfast; Dr. H. W. Bailie, Belfast; Prof. W. B. Bell, Liverpool; Dr. C. L. Browne, South Mimms; Sir C. Ballance, Lond.; Dr. H. K. Brade-Birks, Salford; Colonel R. J. Blackham; Dr. G. Blacker, Lond.; Bengal Medical Association, Calcutta, Hon. Sec of; Prof. A. E. Boycott, Radlett; Dr. Browdy, Manchester; Sir J. R. Bradford, Lond.; Mr. H. A. Barker, Lond.; Dr. W. L. Brown, Lond.; Mr. H. E. A. Boldero, Lond.
C.—Dr. F. G. Chandler, Lond.; Dr. C. Coombs, Bristol; Chadwick Trust, Lond.; Lieut.-Col. E. M. Callender, Lond.; Dr. S. D. Clippingdale, Lond.; Mr. H. W. Carson, Lond.; Mr. W. Clarke, Geneva; Mr. S. Cumberland, Lond.; Messrs. W. H. and L. Collingridge, Lond.
D.—Dr. V. Dickinson, Lond.
E.—Dr. E. Evans, Cardiff; Mr. R. C. Elmslie, Lond.; Mr. W. G. Evans, Bath; Mr. D. L. Eadie, Edinburgh.
F.—Dr. A. Feiling, Lond.; Factories, Chief Inspector of, Lond.; Dr. H. French, Lond.; Food Education Society, Lond.
G.—Mr. J. A. Gorsky, Lond.; Dr. J. Guy, Edinburgh; General Medical Council, Lond.; Great Northern Central Hospital, Lond., Sec. of; Dr. H. B. Gardner, Lond.
H.—Mr. P. B. Hoeber, New York.
I.—Industrial Settlements (Incorporated), Lond., Sec. of.
K.—King's College Hospital Medical School, Lond., Sec. of; Dr. A. Keen, Lond.; Dr. G. L. Keynes, Lond.
L.—London Temperance Hospital; London Dermatological Society.
M.—Medical Benevolent Fund Guild, Lond.; Medical Society of London; Maudsley Neurological Hospital, Lond.; Dr. R. W. Mackenna, Liverpool; Ministry of Health, Lond.; Dr. H. Maclean, Lond.; Medical Officers of Schools Association, Lond., Hon. Sec. of; Mr. G. Mayall, Bolton; Dr. E. Mellanby, Lond.; Ministry of Labour, Lond.; Dr. A. E. Mahood, Clifton; Ministry of Pensions, Lond.; Dr. H. B. Mylvaganam, Bangalore.
N.—Mr. R. K. Nesbit, Hindley; Mr. F. L. Nicholls, Cambridge; National Hospital for the Paralysed and Epileptic, Lond.; *New York Medical Journal*; New Transport Co., Lond.; Northampton, School Medical Officer of; National Safety Council, Chicago; Dr. H. P. Newsholme, Ripon.
O.—Messrs. Oppenheimer, Son, and Co., Lond.
P.—Dr. R. H. Paramore, Rugby; Dr. W. E. Peacock, Lond.; Mr. V. G. Plarr, Lond.; Dr. H. R. Prentice, Lond.
R.—Royal Society of Arts, Lond.; Dr. N. Raw, Lond.; Royal Medical Benevolent Fund, Lond., Sec. of; Royal Society of Medicine, Lond.; Royal Institution, Lond.; Dr. D. Rankin, Lond.; Dr. D. M. Ross, Bournemouth; Messrs. Reynolds and Branson, Leeds; Dr. J. D. Rolleston, Lond.; Dr. D. G. Rice-Oxley, Lond.; Royal British Nurses Association, Lond.; Dr. G. M. Robertson, Edinburgh
S.—Save the Children Fund, Lond., Sec. of; Society for the Study of Inebriety, Lond.; Dr. T. E. Sandall, Oxford; Mr. E. G. Slesinger, Lond.; Dr. E. F. Skinner, Sheffield; Dr. A. Schachner, Louisville; Scottish Board of Health, Edinburgh; Dr. C. St. Aubyn-Farrer, Lond.; Dr. R. E. Smith, Lond.
T.—Dr. H. A. Treadgold, Lond.; Dr. A. H. Thompson, Lond.; Messrs. Turnbull and Findlay, Glasgow.
W.—Dr. G. Ward, Sevenoaks; Dr. K. M. Walker, Lond.; Dr. E. H. Worth, Lond.; Wellcome Historical Museum, Lond., Curator of; Walsall General Hospital, Sec. of; Dr. C. J. F. Westman, Lond.; Miss S. M. Weaver, Leeds; Dr. C. Worster-Drought, Lond.
Y.—Mr. M. Yearsley, Lond.

Notes, Short Comments, and Answers to Correspondents.

ARMY HYGIENE DURING THE GREAT WAR.[1]

BY SIR JOHN GOODWIN,
DIRECTOR-GENERAL, ARMY MEDICAL SERVICE.

AFTER referring to the personal hygiene of the troops, and drawing attention to the importance of the prophylactic as well as actual reparative work carried out by the dental department, Sir John Goodwin referred to the problems of the clothing and equipment of the soldier and the provision of the three main essentials to life—namely, food, water, and air.

Problems Affecting the Individual.

In the past the military ration had been arranged upon more or less empirical lines after actual test marches. During the war, however, the importance of avoiding waste led to more exact studies of the needs of the troops by the method of indirect calorimetry. The enormous army has throughout been fed in such a manner as to provide the energy and heat required for effective fighting and to avoid outbreaks of disease traceable to the diet. For the minor outbreaks of neuritis and scurvy in those most distant areas, Mesopotamia and North Russia, the dependence on preserved food-supplies from home were accountable. Steps were quickly taken, however, to provide the necessary accessory food factors, at first by germinating pulses and by yeast, later by the intensive local cultivation of fresh food-stuffs, of as much value to the native inhabitants as to the troops. The numerous cookery schools have been attended by officers of every grade of seniority, that they might be able so to supervise the preparation of the rations issued as to provide the most suitable, varied, and appreciated meals. Moreover, it was a matter of absolute necessity to supply men in the trenches with hot meals, and this was ensured by means of jacketed hot-boxes.

Water-supply.—The question of a pure water-supply is one of the first importance. Filter candles were found to be unsuitable for active service conditions, and were replaced by chlorination. The net result of war experience was the established value for sterilisation purposes of chloride of lime in the form of bleaching powder. As the war proceeded the need for the provision to advancing troops of properly treated water in large quantities led to the development of special water-tank companies. These units are capable of collecting, filtering under pressure through sand, sterilising by chlorine gas (by means of an ingenious regulator), and transporting large quantities of water wherever the motor-lorry could move. In the same way, barges for use along the waterways of the various theatres of war were developed.

The question of *air and ventilation* are of equal importance. Pflüger's experiments showed the range of droplet infection from mouth to mouth to be somewhere within 1½ metres, and this is the range that should represent the minimum proximity of men's heads in barracks or beds. The importance of that knowledge had sometimes been submerged by reason of national necessity. However, two instances have recently shown that the principle involved—now known as "spacing-out"—cannot be disregarded. These were (1) the cerebro-spinal meningitis outbreak starting in 1915; (2) the influenza outbreak of 1918. In both these instances a populace was unavoidably concentrated, with a resultant reduction in the spacing-out, and an opportunity arose for "mouth-to-mouth" or "droplet" infection. In the cerebro-spinal meningitis outbreak, immediate spacing-out of the affected troops produced a rapid fall in the case and carrier incidence; in the same way, it was effective in reducing the high incidence of influenza on its last appearance as a pandemic. It may be of interest to note that the experience of the war has led to a reconsideration and still further enlargement of the cubic space allowed the troops, particularly overseas, and also of the correlated questions of pharyngeal and pulmonary disinfection. The importance of pharyngeal disinfection was early recognised, and all transports were provided with special inhalation chambers. It is intended that these shall be a permanent feature of transports in the future, and it is of interest in this connexion to note the recent encouraging reports from industrial works of the value of certain gases, inhaled in insensible but definite amounts, in inhibiting the incidence of influenza and allied respiratory disorders.

Problems Affecting Particular Groups.

So much, then, for questions affecting all the troops. Now we come to the more special problems affecting particular groups of soldiery, and perhaps the most important is the control of outbreaks of infectious disease. Cases of infectious disease in war areas were immediately isolated in well-staffed and equipped isolation hospitals behind the line. Special dysentery centres were arranged whither all cases of diarrhœa were immediately removed and kept under observation; if diagnosed as dysentery they were notified, evacuated down the line and isolated; otherwise they were returned to duty on recovery. The administrative sanitarian was thus enabled to locate foci of infection, to trace continuity between areas, and generally to decide where executive sanitary action was necessary.

Epidemic disease—with the exception of the influenza pandemic—was noticeably absent, and the care taken to filter off unfits on the lines of communications went far to explain the remarkable freedom from disease of the men in the line. The problem of the excremental diseases was approached in two ways—firstly, by the general inoculation of the troops so as to provide a relatively high immunity to enteric, and secondly, by the careful disposal of all infected matter. No little credit must be accorded to regimental and medical officers for their part in educating the men to the value of inoculation, and in overcoming the natural—or inspired—reluctance to what has in our army remained a purely voluntary measure.

The associated problems included the safe disposal of all excrement, the purity of the water-supply, the safeguarding from dust and flies of food stores, and the elimination so far as possible of flies. Incineration of excremental matter proved to be the surest and safest method of disposal in the absence of a water-carriage system, and this method has developed into something of an exact science.

The fly question, especially in the Eastern theatres, was a vast and difficult one, in view of the quantity of horse litter inevitably associated with the army, and frequently of the tactical or climatic impossibility of burning such fertile breeding matter. Ingenious methods other than burning included the utilisation of horse litter as the basis of desert roads, built up by the addition of a top layer of clay, which becomes compacted under the pressure of traffic; or, again, the compacting of litter into wind-proof walls utilised as screens for the stables of animals otherwise unprotected. The study of substances intended for fly destruction, including the "bottle flies" and "flesh flies," associated with the corpses in No Man's Land led to the adoption of the most satisfactory materials; and the knowledge thus gained will doubtless prove of value to the community as a whole.

Insect-borne Diseases.

There was a considerable wastage in all theatres of war from insect-borne diseases of different types. In France, much of the minor sickness of the troops was traceable to louse infestation, from various septic skin conditions to trench fever. The sufferings of our Allies the Serbs from typhus fever also emphasised the necessity for a vigorous campaign of disinfestation. The problem was met largely by the provision of facilities for bathing at frequent intervals and by the increase in facilities for disinfecting personal clothing and blankets. Later dependence was largely placed on portable spray baths. The development in methods of disinfection by steam in the latter part of the war culminated in the use of the Foden-Thresh apparatus, comprising two large Thresh disinfecting chambers mounted on and operated under slight pressure by a Foden steam-lorry. The apparatus could move rapidly to any area in which it was required, commence operations at once by turning the steam into the chambers, and then drive to a fresh centre for operations. In areas where road conditions were less suitable for lorry transports disinfectors were improvised from the native wine barrels; or, in the more settled units, improvised hot-air disinfectors were adapted to dug-out conditions. The value of hot air is now established, and the latest "Orr hot-air huts" are models of efficient disinfectors.

The steps taken in the prevention of malaria, the sanitary arrangements in the trenches and in billeting areas were well organised, and the Sanitary Section also did valuable service in effecting certain economies. For example, by the careful collection in special cold-water grease-traps of wash-up fat, and of the scrap-fat and bone-fat rendered in cookhouses, a bulk of crude fat was obtainable which proved of immense use in the manufacture of soap and of glycerine.

Among the adjunct means of sanitary control were the hospital clinical and mobile laboratories, both "bacteriological" and "hygienic"; the latter were mounted on motor-lorries and capable of proceeding rapidly to undertake investigations in any part of the area served by them. Attention must also be drawn to the preparation of the millions of doses of vaccines used throughout the armies, as well as to the researches on dysentery, epidemic jaundice, and other subjects. The Medical Research Committee is

[1] Being an abstract of the second of three Chadwick lectures on Military Hygiene in Peace and War, delivered on March 15th, 1920. The first lecture appeared in THE LANCET of March 13th.

publishing many of the results of war studies. In 1916 the Allied Governments formed the Inter-Allied Sanitary Commission to discuss common problems, to make known the results of effort or experiment, and so to effect mutual coöperation. Certain delegates were appointed to meet monthly for discussion in greater detail than was possible at the full annual meetings. Many of the Allied nations were thus enabled to apply measures of prevention, successfully carried out by others, with which they were at the time unfamiliar.

By the labours of the united profession, all doing that work which was required of them and which local authority considered most immediately necessary, the troops in this war were served as few armies have ever before been served.

HOME HEALTH RESORTS.

A LETTER in THE LANCET of Feb. 28th announced the forthcoming International Congress at Monaco, at which the subjects to be discussed are Medical Hydrology and Geology, Hygiene and Climatology, Spas and Thalasso-therapy. Those who attend will hold a watching brief for the health resorts of Great Britain, and the secretary of the Organising Committee asks whether, in so far as the benefit of a cure is derived from complete change in the patient's habits and surroundings, it is not time for Great Britain to cater for those who used to flock to Central Europe. As long ago as 1908 Dr. Neville Wood suggested in our columns that if the Channel proved an excellent barrier between our patients and their worries (amongst which may usually be included their relatives and friends) it should also be made to serve reciprocally for our foreign visitors. He pointed out that while it is obviously useless to try to keep in England those who yearn for the warm sun in mid-winter we should redress the adverse balance by encouraging an interchange of invalids. Most municipalities exhaust themselves in the vain attempt to keep the British from foreign spas, but make no efforts to popularise their towns abroad. The literature describing our spas is written in English only. Foreign manuals of European health resorts hardly mention them, not through ill-will, but in many cases after an unsuccessful endeavour to obtain the necessary information. There has been a development of Anglophilia among the French and Italian during the war, and if the amenities of some of our spas were only known to them there would probably be no lack of visitors.

If we review our position it becomes clear that we cannot compete with the triple combination of climate, scenery, and elegance offered by Biarritz, St. Moritz, and the Riviera. Again, the waters of our inland resorts are in no way peculiar to this country, but are of types equally well represented on the continent. But as we have pointed out before, one big advantage exists in that nearly every place in Great Britain is at its best in the hot summer months, at the season when continental places are often at their worst, at any rate from the standpoint of active exercise in the open air. There are few chronic diseases now in which the treatment does not include mild exercise in the fresh air. Modern research and experiment have shown its special value, for example, even in heart cases, where complete rest was formerly advised.

Among the attractions of our health resorts are the excellent links by which they are usually surrounded. To the golf enthusiast weather matters little; moreover, since recent researches have established the tonic value of cool moving air, our much-abused climate may in the future be sought even for that variability so dreaded in the past.

As regards balneotherapy our hydropathic institutions need fear no comparisons, but with such a long and attractive coastline it is surely in thalasso-therapy that we should attempt to specialise. In this respect we are not very enterprising. Towns which have spent much money on elaborate parades and drives along the sea-front make but little provision for the convenience of sea-bathers. The private tent or hut, which is now supplanting the old bathing machine, has at least one disadvantage—that members of the family cannot be in the water all at the same time, and that the prearranged time-table often leads to a condition of blue shivers in the last man out.

Colonials visiting our seaside places are often amazed at the primitive arrangements. In a Natal resort, for instance, the bathing-huts are roomy and well lighted, fitted with shelves and mirrors as well as hooks, and divided into an inner carpeted and an outer sloped compartment. The latter is provided with a bucket of fresh water and a small cistern on the roof for a shower-bath, while the attendant turns on an electric hair-drying apparatus if desired.

We do not suggest that the pleasure of a swim is really much enhanced by all this luxury, but while most of us are prepared to bathe off the beach, with a rock as shelter, foreigners are undoubtedly attracted by elaborate dressing-rooms. Few will deny that the sticky, gritty feeling which remains after a rub with a towel the size of a handkerchief detracts somewhat from the refreshment of a sea bath. For the rest, swimming regattas and water-polo might be encouraged by the presentation of challenge cups, and on certain shores a modified form of surfing could probably be introduced.

There is one other point needing attention if foreigners are to be attracted—the food at our seaside hotels. The farce of a long, elaborate menu, written in language as unfamiliar to our Allies as to ourselves, and as doubtful in origin as are the dishes it indicates, should be abandoned. The substitution of a three-course dinner would be welcomed, we believe, by all visitors, of whatever nationality. Foreigners do not want so-called French pastries and sauces in England, and appreciate a complete change of diet. The only complaint they are likely to make is of the monotony of the vegetables served.

NATIONAL SCHEME FOR THE EMPLOYMENT OF DISABLED MEN.

THE first edition of the King's National Roll, which has just appeared, contains the names of some 10,000 employers who have undertaken to provide work for disabled men under the National Scheme. This represents in the aggregate 1,500,000 workpeople, including nearly 90,000 disabled men. Since Dec. 31st, when the list went to press, it is stated that the number of employers registered has grown to over 12,000, but the supply of disabled men is unhappily by no means exhausted. There are thousands still in hospital, for whom livelihood employment will have to be found. Copies of the Roll may be seen at employment exchanges, free libraries, and other public buildings, and are to be purchased from H.M. Stationery Office at 1*s.* 6*d.*

THE POSITION OF POTASH SUPPLIES.

IN an article in this column in THE LANCET of Feb. 14th we referred to the possibility of potash deposits being found in certain English counties where rock-salt occurs in abundance. The Germans were long ago persuaded that potassium salts were probably associated with the common salt deposits in that country, and that proved to be the case. Such a finding, we suggested, should stimulate investigation in our salt districts. We have since received an interesting communication from the Alsace-Lorraine Development and Trading Company, who state that the Alsatian deposits of potash salts extend over an area of 50,600 acres. They are situated in the region of Cernay and South Mulhouse, and consist of layers of a thickness of from 8 to 18 feet at a depth of from 1600 to 2300 feet. According to the most conservative estimates, the lower layer alone should yield 2000 million tons of potash salts, equal to 300 millions of pure potash (K_2O), which is about 400 times, it is stated, the annual pre-war consumption of the whole world. This should be good news for the agricultural industry. Sylvinite, the name of the deposit, is a mixture of rock-salt and potassium chloride, the yield of the latter being from 50 to 60 per cent. The output will be increased as the damaged state in which the Germans left certain of the mines is restored.

The following note in the *Economic Review* (March 3rd) is of interest in connexion with these particulars :—

Potash Output in Alsace.

According to the *Berl. Tagbl.*, the potash output in Alsace varies from 4000 to 5000 t. per day. Large orders are coming in, but, owing to the continued transport difficulties, barely 2000 to 3000 t. can be despatched daily. The purchasing syndicate of the Alsatian Potash Works is at Mulhouse, and bears the name of "Société Commerciale des Potasses d'Alsace-Lorraine." (*Frankf. Ztg.*, Feb. 14th, m. ii.)

France has evidently gained a large asset in the mineral resources of her restored provinces, and the breakdown of the great German potash monopoly of pre-war times is clearly threatened.

THE VALUE OF REST IN THE TREATMENT OF GONORRHŒA.

IN a recent number of the *Medical Journal of Australia* appears an article by Major W. L. Potter, of the Australian Medical Service, on the Influence of Treatment and Rest on Gonorrhœa. It is based on the study of 365 acute cases treated during a long period of duty in 1916. Particular attention has been paid by the author to the incidence of epididymitis, since the occurrence of this complication in a case doubles the period required for its cure. A comparison is made of the various systems of treatment employed at No. 5 Australian General Hospital, the value of the different methods of treatment being determined by two criteria: first, the percentage of cases developing epididymitis; secondly, the time taken to effect a cure. A system of treatment aimed to avoid complications such as epididymitis may raise the average time taken to effect a cure. Conversely the adoption of a more drastic system of treatment may shorten the average time of cure, but at the same time produce a greater number of complications. The ideal system is therefore one designed to cure the urethritis in the shortest period compatible with the avoidance of complications. As the result of a careful analysis of the series of cases under his care Major Potter has arrived at the following conclusions: (1) that suitable treatment has a favourable effect on disease; (2) that the most important factors in the avoidance of complications are rest and abstention from

urethro-vesical irrigation during the earlier stages of the disease; (3) that diet and medicines are of secondary importance; (4) that prostatic massage and vaccine therapy are of no utility; (5) that no system of outdoor treatment will produce satisfactory results unless facilities for rest are provided.

PUBLIC HEALTH IN CALCUTTA, 1918.

THE number of deaths in Calcutta during 1918 reached "the appalling total" of 31,371, equivalent to a death-rate of 35 per 1000, calculated on the census population of 1911; this ratio was higher than in any year since 1907, and in strong contrast to that of 1917, which was 23·8, the lowest hitherto recorded. The ratios require to be modified according to the increase of population during seven years since the census, but the actual number of deaths compared with those of the previous year (21,360) points unmistakably to the presence of a severe and widespread epidemic—i.e., influenza—which broke out in June, and again with increased virulence in September. The deaths registered as due to this cause were 4115, but Dr. H. M. Crake, the medical officer of health, considers that at least 2000 should be added to this figure, as there was an excess mortality of 2500 under the headings of respiratory diseases and fevers. The ratios of death from all causes varied in different parts of the city from 11·7 in Park-street Ward to 44·7 in Entally, and 64 in Kidderpur; in 20 out of the 25 wards the ratios were over 30 per 1000, whereas in 1917 only one ward had a ratio over 30. The female mortality was 44·1, compared with 30·6 for males, but there was not such a relative disparity between the sex ratios as in 1917, when they were respectively 32·1 and 19·8, or as in the quinquennium 1913–17, when they were 36·2 and 22·5 Though the actual difference is greater, the relative difference is not so marked. The male ratio (1917) was increased by 54 per cent.; that amongst females by 37 per cent. About two-thirds of the inhabitants are Hindus, with whom the death-rate was 37·5; among Mohammedans it was 30·5; among non-Asiatic Christians, 25·6. It is stated that these latter had no immunity from influenza attacks, but apparently an increased power of resistance and lessened liability to complications and sequelæ. The heavy mortality among females, especially from tuberculosis (2·9 per 1000, compared with 1·6 among males), due to the insanitary purdah system, by which the women are confined in the almost invariably ill-lighted and ill-ventilated zenana, has been repeatedly pointed out.

Infantile Mortality.

The infantile mortality ratio was 280 per 1000 registered births. In three wards it exceeded 400 per 1000, but defective birth registration is considered to be partly responsible for these "appalling figures. ..... With excessive overcrowding, a local outbreak of small-pox, and two epidemics of influenza, the babies born in this densely-packed agglomeration of insanitary buildings have had very little chance of surviving." In Jorabagan Ward the ratio was 581 per 1000. Of the 5096 deaths among infants in the whole city 1791 died before they were a week old, nearly all from "congenital debility" (769), premature birth (545), or tetanus neonatorum (395). It is pointed out that the prevention of this last-named cause is perfectly feasible; "it is unknown amongst cases attended by Corporation midwives." Bronchitis caused 1483 infantile deaths (29 per cent. of total), due to insufficient clothing; but diarrhœa caused only 280 deaths (5·4 per cent.), because breast-feeding is almost universal.

Plague, Enteric, Influenza, &c.

Plague deaths numbered 210 (0·23 per 1000) compared with 81 in 1917. The disease was imported by immigrants from Rajputana and elsewhere into the already crowded Burra Bazar district, and was localised in this and the immediately surrounding sections. Cholera caused 1526 deaths (1·7 per 1000), also a considerable increase on the previous year (866 deaths, 0·96 per 1000). All districts of the city were affected, but most deaths occurred in the wards bordering on the river or on the grossly polluted stream known as Tolly's Nullah, which is really an open sewer. It is, however, "considered peculiarly sacred [i.e., by Hindus], and bathing in it is an essential part of various festivals, which attract numerous pilgrims." The deaths among Hindus numbered 1295 (2·1 per 1000), among Mohammedans 214 (0·88 per 1000).

Under enteric fever were registered 345 deaths (0·38 per 1000), a considerable increase over the mortality from this disease during the four years immediately preceding, in which the ratio had varied between 0·21 and 0·28; in 1913 it had been 0·39. The deaths occurred chiefly in July and October; the epidemic prevalence of influenza showed itself in June and September. Dr. Crake very reasonably supposes that this influenza prevalence lowered the powers of resistance, so that many cases of enteric died that, influenza being absent, would have recovered. "A lowering of the general powers of resistance not only means that the minimal lethal dose of a bacterial toxin is relatively smaller, it also means that the amount of infection capable of causing the disease is also relatively smaller. In other words, it is not only easier to kill a man whose powers of resistance are lowered, it is also easier to infect him. ..... Hence the general rise in the mortality, under almost all headings, which has followed the outbreaks of influenza." This lowering of vitality is probably the most serious factor in influenza infection, and treatment appropriate to the condition that may ensue is of the greatest importance. It is to be noted that "Non-Asiatics and Anglo-Indians," with a ratio of 0·65 deaths per 1000 from enteric fever, suffered much more than Hindus (0·48), and these, again, more than Mohammedans (0·10); there was probably increased susceptibility, as Dr. Crake suggests. Malaria showed some increase, 1·3 deaths per 1000, compared with 1·1 in 1917. The wards most affected by malaria and "other fevers" are suburban wards with tanks, surface drains, &c., that provide mosquito breeding-places.

Increase in Tuberculosis Death-rate.

Tuberculosis had declined from a death-rate of 2·5 per 1000 in 1913 to 1·7 in 1917; in 1918 it rose to 2 per 1000, the number of deaths being 1826. No doubt this was due to the influenza outbreak. In two wards (Entally and Beniapuker) the rate exceeded 3 per 1000. Ill-ventilated houses and promiscuous expectoration make spread of the disease practically inevitable. Indian Christians, with a mortality of 4·8 per 1000, suffer much more than Mohammedans (2·1) or Hindus (1·9). Being cut off by their orthodox relatives on embracing Christianity, they often have a hard struggle to live, and overcrowd certain localities; everyone "spits promiscuously all over the place," and spread of the disease is inevitable. In the age-period 15 to 20 years the male death-rate from tuberculosis was 1·2, and for females 4·9 per 1000; from 20 to 30 years the ratios were 1·5 and 4·9; from 30 to 40 years 2·2 and 4·7. "The chief cause of this appalling mortality amongst women is the purdah system maintained in insanitary houses in the slums of a great city."

Respiratory Diseases.

Respiratory diseases caused 6914 deaths, compared with 4769 deaths in the previous year, the respective ratios being 7·7 and 5·3 per 1000. The bulk of the increase was due to the influenza epidemics, resulting in fatal bronchitis or pneumonia. In Kidderpur Ward the respiratory death-rate was 15 per 1000, that for influenza being 22·7; the actual numbers for these two diseases were 329 and 496 respectively. The beginnings of the influenza epidemic in June could not be definitely localised; the early cases were of a mild character, and the disease is not compulsorily notifiable. "The lightning-like rapidity with which it spread all over the city baffles description. ..... All classes of the community in all parts of the city were attacked." The municipal services were disorganised, approximately 50 per cent. of the staff being infected. Three types were distinguished: (*a*) typical, with the usual symptoms; (*b*) a form resembling dengue, with fever, pains all over the body, profuse perspiration, and marked prostration; (*c*) intestinal, with vomiting and diarrhœa. A second outbreak occurred in the middle of September, which lasted until December. The disease spread slowly, but respiratory complications were more frequent and the case-mortality considerably higher. Over a hundred relief centres were established, as well as 50 travelling dispensaries. Five types were distinguished: (*a*) simple febrile; (*b*) respiratory (bronchitis, pneumonia); (*c*) circulatory (high fever, tendency to syncope, generally fatal); (*d*) abdominal (diarrhœa, dysentery); (*e*) nervous (delirium, coma, death). A total of 164,695 patients were treated up to Dec. 31st, 1918. According to one estimate the case-mortality rate was 24·5 per 1000; according to another 34·4 per 1000. Dr. Crake considers that the mean of these two rates—that is, about 3 per cent.—is approximately correct.

Summary of the Report.

Many other subjects are dealt with in Dr. Crake's report, which is fully illustrated with tables and diagrams, and has a plan of Calcutta, showing the relative mortality in the various wards. The difficulties of administration that have to be overcome in dealing with epidemic emergencies such as have been mentioned would not be lessened in a climate like that of Calcutta, where the mean *minimum* monthly temperature was above 75° F. from May to October inclusive, and the mean *maximum* was above 87° from March to October inclusive. In June there was a fall of 16 in. of rain, and the mean minimum temperature was 78°, conditions most favourable for the incubation of pathogenic germs. The effectual carrying out of the details of sanitary administration among a population such as that of Calcutta and under these climatic conditions presents difficulties that are obvious. The medical officer of health is to be congratulated on the excellent results that have been attained.

THE R.A.M.C. VIEWS ON VENERY.

To the Editor of THE LANCET.

SIR,—I have lately been reading a book by Stephen Graham entitled "A Private in the Guards," and found therein (pp. 255–6) a statement which ought to be challenged. He writes that the army chaplains "could not inveigh against lust because the medical officer was of opinion that Nature's needs must be satisfied." "Sexual intercourse was regarded as a physical necessity for the men. Besides being the medical point of view, it became the official army point of view as well, and we were often told in lectures that it was natural, and all we had to do was to use the safeguards and preventatives which were at our disposal to save us from disease." "Hundreds of thousands were even encouraged to go with impure women." I believe, Sir, the exact contrary is held by the bulk of the medical profession in this matter. Such a travesty of truth seems calculated to have a pernicious effect on the readers of this remarkable book. If the author really has any backers in the R.A.M.C. they should speak for themselves.

I am, Sir, yours faithfully,

H. KENNEDY SMYTH, M.B., B.Ch., D.P.H.,
Umtali, Rhodesia, Jan. 31st, 1920. District Surgeon.

In Memoriam.—The names of the Representative Committee constituted to put into execution a scheme for erecting a permanent memorial to the officers, non-commissioned officers, and men of the Royal Army Medical Corps who fell in the war (referred to in the annotation in THE LANCET of March 6th) were printed in THE LANCET of May 3rd, 1919, p. 766.